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EMERSON'S SUBLIME SCIENCE

by

Eric Wilson

A dissertation submitted to the Graduate Faculty in English in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

1996

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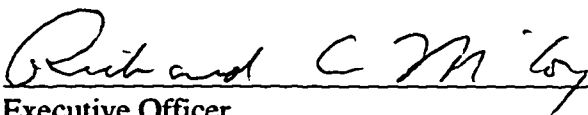
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Abstract

EMERSON'S SUBLIME SCIENCE

by

Eric Wilson

Adviser: Professor Joan Richardson

This study examines relationships among Emerson's theory of the sublime, interest in science, and literary style. It focuses on the years between his break with the church in 1832 and the publication of *Nature* in 1836. During these years, Emerson's assiduous reading of science provided him with patterns on which to ground the poetics and rhetoric practiced in *Nature*. His methods of composition were especially informed by his interest in the then emerging science of electromagnetism, from which he learned that things are not discrete and static, but condensations of vast systems of force. This and other discoveries struck Emerson as sublime. He translated these scientific insights into a sublime writing style, constructed to agitate readers as nature excited him, to shock them into a recognition of the relationship between matter and force. Emerson's own book of nature, his *Nature*, is not only a treatise on the connection between form and energy; it *is* nature. The first chapter introduces the senses of Emerson's "sublime science," showing it to be an intersection of aesthetics, science, and literary style. The term describes Emerson's theory of the sublime, based both on Immanuel Kant's aesthetics and Emerson's own inflections of science, and his practice of the sublime, his attempt to craft texts that inspire the sensation of the sublime in readers. In detailing his rationale for these practices and describing their qualities,

the chapter emphasizes the scientific base for his charged style. Chapter two develops the scientific basis for Emerson's theory of the sublime and his related writing style by providing a detailed account of how the science of electromagnetism grew out of late eighteenth- and early nineteenth-century organicism, showing that for Emerson the work of Michael Faraday and Humphry Davy provided a scientific version of the philosophical and poetical insights of J.W. Goethe and Samuel Taylor Coleridge. The work of Faraday offered Emerson a new model of powerful writing, one whose ideal is not the organic plant of Coleridge or Goethe, but a water drop containing the electricity of lightning. Chapter three illustrates Emerson's electromagnetic poetics and rhetoric through a close reading of *Nature*. It shows how in three passages, Emerson revises Judeo-Christian elements in light scientific insights while simultaneously crafting words that seem to pattern the electric charges of nature. These passages shock readers out of ordinary reading habits, urging them to fashion tropes that approximate the indeterminacy of Emerson's electric clusters. The essay, in form and content, teaches readers that the world and words, properly seen, are sublime. Finally, in a brief coda, the study reflects on Emerson's synthesis of science, religion, and literature by connecting it to trends both ancient and modern, suggesting that he houses the spirit of hermetic alchemy in the forms of modern science.

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Introduction

Secret Mechanism of Life

Poetry is the breath and finer spirit of all knowledge; it is impassioned expression which is in the countenance of all Science.

William Wordsworth
1802 Preface to *Lyrical Ballads*

The poet alone knows astronomy, chemistry, vegetation, and animation, for he does not stop at facts, but employs them as signs.

Ralph Waldo Emerson
"The Poet"

Ralph Waldo Emerson ascended the pulpit of Boston's Second Church on September 9, 1832, to deliver his last sermon as pastor. His theme was the Lord's Supper, a rite he no longer felt compelled to administer. He explained to his congregation that he must resign his office, as he could not continue to dispense an ordinance that he found not only unsanctioned by scripture, but also spiritually dead. This day, this sermon, proved the turning point of Emerson's young life. On this autumn Sunday, he broke from the forms of the Church. Henceforth, he was no longer the kindly parochial pastor, but the cosmopolitan minister of terrible simplicity, preaching the laws of nature, in his words dispensing nature's perpetual force.

One purpose of this study is to examine how Emerson revised his religious tradition in light of the new scientific information that emerged during the nineteenth century. It focuses on the years between his break with the church in 1832 up until the publication of *Nature* in 1836. These years were crucial for the

young Emerson: During most of 1833, he traveled to Europe, where he met some of the great writers and scientists of his day. He drew poetic inspiration from conversations with Thomas Carlyle in Scotland and experienced the beauty of science while looking through the achromatic microscope of Giovanni Battista Amici in Florence. Poetics and science merged powerfully for him while he strolled through the Jardin des Plantes in Paris. There he was fascinated by the cabinets of botanical and zoological specimens classified according to internal function by A.L. Jussieu and G.L. Cuvier, among others. He saw that nature was a book whose form and content were inseparable, outward form a pattern of inward energy. Standing before the cabinets, he experienced his equivalent Pauline vision. Sensing "the upheaving principle of life everywhere incipient," he vowed "to be a naturalist" (*JMN* 2:200).¹ Upon his return from Europe in the fall of 1833, he assiduously read scientific texts, delivered lectures on science, and, in 1836, created a new vulgate in *Nature*, a dynamic synthesis of science and religion, words and things.

This study explores how the poetics and rhetoric of Emerson's *Nature* were informed by his interest in nineteenth-century science, especially electro-magnetism, from which he learned that things are not discrete and static, but condensations of vast systems of force. This and other discoveries struck Emerson as sublime. He translated these scientific insights into a sublime writing style, constructed to agitate readers as nature excited him, to shock them into a recognition of the relationship between matter and spirit. Emerson's own book of nature, his *Nature*, is not only a treatise on the connection between matter and

spirit, form and energy, but is itself a pattern of nature's force. It *is* of the process it is about; it is about nature and *is* nature.

A handful of studies of have developed Emerson's relationship to science during the years between 1832 and 1836. As Harry Hayden Clark noted in 1931 (in one of the few detailed studies on Emerson and science), Emerson's interest in astronomy and evolution from 1832 to 1838 helped to motivate his turn away from ecclesiastical thought and toward a belief in nature as the basis for truth and ethics (226-27). In 1934 Joseph Warren Beach continued this work by exploring Emerson's relationship to pre-Darwinian evolution. In 1952, Sherman Paul likewise observed the influence of natural science on Emerson's thought. He was followed by Jonathan Bishop, who in 1964 noted Emerson's interest in magnetism, and by Gay Wilson Allen, who in 1975 extended Clark's and Beach's work in "A New Look at Emerson and Science," in which he summarized Emerson's early lectures on science between 1833 and 1836 and cursorily suggested how science, especially geology, was a basis for Emerson's major ideas. More recently, in 1983, David Robinson in "Emerson's Natural Theology and the Paris Naturalists: Toward a Theory of Animated Nature" showed that Emerson's viewings of the specimens in the Jardin des Plantes shaped his theory of animated nature, and in 1987, Leon Chai in *The Romantic Foundations of the American Renaissance* examined Emerson's interest in biology, primarily as it related to his interest in the *Naturphilosophie* of Goethe (145-150). Further, Lee Rust Brown in "The Emerson Museum" (1992) argued that Emerson's experience in the Jardin des Plantes in 1833 provided a model of the organic classification he would try to mimic in his

essays.

One trend in Emerson's development during these seminal years has been largely overlooked: his fascination with the then emerging scientific field of electromagnetism. He seemed especially taken with the work of the British scientist Michael Faraday, whose experiments, Emerson wrote in his journal in 1833, perhaps uncovered the "secret mechanism of life" in the "great long expected discovery of the identity of electricity and magnetism" (*JMN* 4:94). Emerson celebrated the "wonders opened" by Faraday and others in "Magnetism and Electricity" (*EL* 2:38). Ultimately, for Emerson, Faraday's discoveries, complemented by those of Faraday's mentor, Humphry Davy, opened up the possibility that "the forms of natural bodies depend upon different arrangements of the same particles of matter; that possibly the world shall be found to be composed of oxygen and hydrogen; and that even these two elements are but one matter in different states of electricity" (*EL* 2:29). This idea of electrically charged particles as the essentials of reality led Emerson to write in a late essay a summation of his view of Faraday: "Nature . . . is on wheels, in transit, always passing into something else, streaming into something higher; . . . matter is not what it appears; . . . chemistry can blow it all into a gas. Faraday, the most exact of natural philosophers, taught that when we should arrive at the monads, or primordial elements . . . we should find not cubes, or prisms, or atoms, at all, but spherules of force" (*W* 3:4).

Emerson favored the work of scientists like Faraday who seemed to corroborate a primary insight of poets, philosophers, and mystics: matter is

comprised of spirit. Faraday and certain of his predecessors and contemporaries on the continent, like J.W. Goethe, Cuvier, and Davy, were experimenting to find the essentials of matter. Their findings suggested to Emerson that the book of nature valued by his Puritan forebears was not a univocal, allegorical text informed by God, but a polyvocal, symbolical one charged by electricity.

Emerson's engagement with science encouraged him to characterize powerful language as electric. Through Faraday he learned to consider the book of nature itself as electrified. Emerson would try to mimic this book in his own text, *Nature*. His notion of nature as a book, its words symbols, derived from his early reading in Emanuel Swedenborg, Guillaume Oegger, Sampson Reed, and Samuel Taylor Coleridge. Emerson always appreciated the Swedish mystic's notion that the world is presented to humans in a "picture language" (CW 4:66). As John Irwin points out, at the time Emerson was composing *Nature*, he was reading Oegger's *Le Vrai Messie* (1829), a thoroughly Swedenborgian work, from which he quoted (in *Nature*): "'Material objects,' said a French philosopher, 'are necessarily kinds of scoriae of the substantial thoughts of the Creator, which must always preserve an exact relation to their first origin; in other words, visible nature must have a spiritual and a moral side'" (CW 1:22-23). Likewise, the American Swedenborgian Sampson Reed influenced the early Emerson considerably. Reed, like Oegger and Swedenborg, viewed the physical world as a hieroglyphical text whose meaning is spiritual (Irwin 8-10). His 1821 lecture "Oration on Genius" and his 1826 pamphlet *Observations on the Growth of the Mind* struck Emerson powerfully. Of course, Coleridge's presence cannot be separated, for Emerson,

from the work of these three thinkers. In an early lecture, Emerson notably quotes these lines of the English poet: "All that meets the bodily sense I deem/
Symbolical, one mighty alphabet/ To infant minds" (*EL* 1:25).

While Emerson certainly learned from these figures that nature could be viewed as a book and words as things, he concretized these insights in his own writing only after he learned from nineteenth-century scientists how the "things" of nature actually functioned. Indeed, his understanding of science eventually led him to criticize Swedenborg's theory of symbol for being too rigid and reductive. Through his reading in science, he came to understand "things" not as static entities, but as evolving patterns of force and electricity. His words would belong to and imitate this reality. Words, like the things of nature, should be fluxional, intense, like vectors. Whether versifying or constructing the sentences for his essays, Emerson wanted, as Richard Poirier has eloquently shown, a transitive, energized style that contained the pulsing of nature itself.²

The new book of nature revealed by Faraday struck Emerson as sublime. In this book, each word/thing is an evolving pattern of vast fields of force. Rightly seen, each thing becomes a window to the infinite. This idea exhilarated Emerson; he wished his essays to bear the same qualities. To this end, he crafted a sublime style that is, to quote Ezra Pound's definition of powerful writing, "charged with a force like electricity," "capable of radiating this energy at a very high potentiality" (*Selected* 134). His passages both electrify and attract readers, crowding their imaginations, inspiring the sensation of the sublime.

In emphasizing these connections between science, the sublime, and

literary expression in Emerson's *oeuvre*, this study reveals him as part of a long tradition of writers who synthesize in their art the religious impulse and scientific information.³ This tradition was archetypally epitomized by Lucretius's *The Nature of Things*, a work Emerson ranks with the eternal ones of the ancient world. Michel Serres lyrically demonstrates that Lucretius work is foremost a treatise on physics, on "Immanence: laws that criss-cross the world" (*Hermes* 98), but also a poem that provides a scientific base for ethics and aesthetics. Lucretius's model was indirectly followed by Dante in his grand unifying vision in his *Comedy*, which incorporated the astronomy of Ptolemy and the physics of Aristotle. But it is to Emerson's beloved seventeenth-century England that we have to look for the most immediate and direct analogues. Basil Willey notes that after Galileo, many writers began to venerate "things-as-they-are" rather than "things-as-they-can-be-conceived" (28). Both Thomas Browne in his *Religio Medici* and John Milton in his *Paradise Lost* (two works Emerson knew well) blend scientific insights with religious feelings. Likewise, the scientists Isaac Newton and Johannes Kepler read their scientific sightings in light of religious insight. Both Douglas Bush and Marjorie Hope Nicolson remind us that these scientists saw the quest for spiritual truth as the end of science (Bush 3-27, *passim*; Nicolson, *Breaking* 146-155). This tradition of poetry containing science was continued on the continent during the Romantic period by Goethe, William Wordsworth, and Percy Bysshe Shelley. Goethe's work on plants specifically inspired the love of morphology and organic form in Emerson. Though Wordsworth and Shelley had no direct influence on Emerson's scientific agenda,

they are firmly in the tradition of which he was a part. Wordsworth's *Prelude* exhibits, as B. Ifor Evans shows, sincere paeans to scientific thought (126-136) and Shelley's *Prometheus Unbound* and other poems are, Whitehead asserts, filled with "the language of accurate science" (81).

Emerson's essay *Nature*, we shall see, is informed, both in form and content, sound and sense, by not only the organicism that influenced Wordsworth and Shelley, but also the electromagnetism that shaped the scientific agendas of Albert Einstein and Werner Heisenberg that in turn impacted the *avant garde* poetics of writers like James Joyce. Emerson's engagement with electromagnetism pulled him away from the scientific and poetic paradigms of eighteenth and nineteenth-century science and toward the quantum universe and postmodern poetics of the twentieth. In viewing Emerson in this fashion, I am working against the trend that Newton Arvin locates in the Emerson criticism of this century. As Arvin showed in the "House of Pain," from the first world war until recently, Emerson has been dismissed by most literary critics as an overly optimistic, mystical thinker with no sense of tragedy or evil. Over the last twenty years Poirier, Stanley Cavell, and Harold Bloom have radically revised this trend in demonstrating Emerson's primacy as a thinker and an artist whose dynamic, polysemous writing style expresses the tensions and energies of a problematic, complex worldview that is far from mystical. A handful of other critics, most notably Barbara Packer, Eric Cheyfitz, Julie Ellison, Alan Hodder, and Robert Richardson have extended this revisionary work on Emerson over the past several years by focusing on his complex themes and agitated style. I wish to contribute

to this emerging portrait of Emerson not as the Concord sage, but as the true connoisseur of chaos, by grounding the agitations of his style and the complexities of his themes in science.

The first chapter, "Sublime Science," introduces the senses of Emerson's "sublime science," showing it to be an intersection of aesthetics, science, and literary style. The term describes Emerson's theory of the sublime, based both on Immanuel Kant's aesthetics and Emerson's own inflections of science, and his practice of the sublime, his attempt to craft texts that inspire the sensation of the sublime in readers. In detailing his rationale for these practices and describing their qualities, the chapter emphasizes the scientific base for his charged style, detailing how the nature of "things" uncovered by Faraday became an inspiration for his expression. I establish relationships in his poetics and rhetoric among electricity, compression, and kinetic language. The chapter creates a semantic field appropriately flexible for picturing Emerson's teeming style, forging links between the sublime, compression, knots, vortices, and turbulences.

Chapter two, "The Sublime Book of Nature," develops the scientific basis for Emerson's theory of the sublime and his related writing style. I provide a detailed account of how the science of electromagnetism grew out of late eighteenth and early nineteenth-century organicism, showing that for Emerson the work of Faraday and Davy provided a verifiable version of the insights of Cuvier, Goethe, and Coleridge. I contextualize Emerson's inflections of science by tracing the idea of nature as a book from Plato's time to Emerson's. I show that the scientific discoveries of the late eighteenth and early nineteenth centuries urged

thinkers to view the book of nature not as univocal--that is, as allegorical, typological, or mathematical--but as polyvocal--as symbolical. In showing that things are patterns of immanent energy, not discrete objects acted on by external forces, scientists of Emerson's time revealed a new book of nature that in turn became the basis for Emerson's poetics and rhetoric. I conclude, after demonstrating Emerson's engagement with electromagnetism, that the work of Faraday offered Emerson a new model of powerful writing, one whose ideal is not the plant of Coleridge or Goethe, but a water drop containing the electricity of lightning.

Chapter three, "Nature's Sublime Book," illustrates Emerson's electromagnetic poetics and rhetoric through a close reading of *Nature*. I show how in three passages in *Nature*, Emerson revises Judeo-Christian elements in light scientific insights while simultaneously crafting words that seem to pattern the charges of nature. These passages shock readers out of ordinary reading habits, urging them to fashion tropes that approximate the indeterminacy of Emerson's electric clusters. I go on to analyze less dense sequences in the essay, illustrating how Emerson's more stable passages and structures become unsettled when readers actively attend to them. I establish a relationship in Emerson's rhetoric between centrifugal and centripetal moments. The centrifugal ones demonstrate, in form and content, a relationship between matter and spirit, words and things, that heightens readers' awareness of the nuances and complexities of the ostensibly univocal centripetal ones. His rhetoric teaches readers that the world and words, properly seen, are sublime.

Finally, in a brief coda, I reflect on the nature of Emerson's synthesizing program by connecting it to trends both ancient and modern. I suggest that he houses the spirit of hermetic alchemy in the forms of modern science.

Notes

¹I shall use the following abbreviations in citing Emerson's work:

<i>CW</i>	<i>The Collected Works of Ralph Waldo Emerson</i>
<i>CEC</i>	<i>The Correspondence of Emerson and Carlyle</i>
<i>EL</i>	<i>The Early Lectures of Ralph Waldo Emerson</i>
<i>JMN</i>	<i>The Journals and Miscellaneous Notebooks of Ralph Waldo Emerson</i>
<i>L</i>	<i>The Letters of Ralph Waldo Emerson</i>
<i>TN</i>	<i>The Topical Notebooks of Ralph Waldo Emerson</i>
<i>W</i>	<i>The Complete Works of Ralph Waldo Emerson</i>

²More than any other recent critic, Poirier has given us directions for reading Emerson. His attention to the complexities of Emerson's style and thought in *A World Elsewhere: The Place of Style in American Literature* and *The Renewal of Literature: Emersonian Reflections* have largely inspired this study. Of course, as mentioned throughout, the Emersonian criticism of Stanley Cavell and Harold Bloom has likewise awakened me and many other readers to the power of Emerson's craft.

³My attempt to read literature in light of science has been inspired by the recent work of several innovative critics. Katherine Hayles work on literature and twentieth century physics has been most important. See her *Chaos Bound: Orderly Disorder in Contemporary Literature and Science* and the collection on science and literature that she edited, *Chaos and Order: Complex Dynamics in Literature and Science*. For important work on science in the Victorian period, see Gilian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot, and Nineteenth-Century Fiction*, and George Levine, *Darwin and the Novelists: Patterns of Science in Victorian Fiction*. Also see Philip Kuberski's *Chaosmos: Literature, Science, and Theory* for a reading of several modernist writers in light of science.

Chapter One

Sublime Science

The sublime . . . is to be found in a formless object, so far as in it or by occasion of it boundlessness is represented, and yet its totality is also present to thought.

Immanuel Kant

Critique of Judgment

Take the most transient and simplest view of science, as it now exists, and what a noble subject for contemplation. . . . Attempts have been made to measure the almost inconceivable distances of the fixed stars and with this, what sublime, practical, and moral results! . . . All vague and superstitious notions banished from the mind, which, trusting to its own powers and analogues, sees an immutable and eternal order, in the whole of the universe, intended . . . to promote the happiness of millions of human beings, and where the whole of created nature offers its testimony to the existence of a Divine and Supreme Intelligence.

Humphry Davy

Elements of Agricultural Chemistry

The universe is a more amazing puzzle than ever, as you glance along this bewildering series of animated forms,--the hazy butterflies, the carved shells, the birds, beast, fishes, insects, snakes, and the upheaving principle of life everywhere incipient, in the very rock aping organized forms. Not a form so grotesque, so savage nor so beautiful but is an expression of some property inherent in man the observer,--an occult relation between the very scorpions and man. I feel the centipede in me,--cayman, carp, eagle, fox. I am moved by strange sympathies; I say continually, "I will be a naturalist."

Ralph Waldo Emerson

Journal, 1833

. . . nature cannot be divorced from its aesthetic values, and . . . these values arise from the cumulation, in some sense, of the brooding presence of the whole on to its various parts.

Alfred North Whitehead

Science and the Modern World

I. Sublime Science

Emerson's "sublime science" is an intersection of several currents, a grid on

which he plots a semantic field. Science itself struck him as sublime and on it he patterned his essay style. He transforms the sublime of nature into his *Nature*, his theory of the relation between matter and energy, of words and things. "Sublime science" describes his poetics, his composition practice, and his rhetoric, his art of persuasion. It is his science of making tropes, meant to attract readers to nature and to shock them into an awareness of its processes. It is a meeting of religion and science, nature and art.

I begin with an example that quickly introduces several elements of his sublime science. In March of 1835, Emerson went walking in the woods surrounding Concord, where he had an epiphany that he soon after recorded in his journal.

As I walked in the woods I felt what I often feel, that nothing can befall me in life, no calamity, no disgrace (leaving me my eyes) to which Nature will not offer a sweet consolation. Standing on the bare ground, with my head bathed in the blithe air, and uplifted into infinite space, I become happy in my universal relations. The name of the nearest friend sounds then foreign and accidental. I am the heir of unaccustomed beauty and power. (*JMN* 4:18)

In the year following this experience, Emerson transformed the above account into the famous "transparent eye-ball" passage.

Crossing a bare common, in snow puddles, at twilight, under a clouded sky, without having in my thoughts any occurrence of special good fortune, I have enjoyed a perfect exhilaration. Almost I fear to think how glad I am.

In the woods too, a man casts off his years, as the snake his slough, and at what period soever of life, is always a child. In the woods, is perpetual youth. Within these plantations of God, a decorum and a sanctity reign, a perennial festival is dressed, and the guest sees not how he should tire of them in a thousand years. In the woods, we return to reason and faith.

There I feel nothing can befall me in life,--no disgrace, no calamity, (leaving me my eyes,) which nature cannot repair. Standing on the bare ground,--my head bathed by the blithe air, and uplifted into infinite space,--all mean egotism vanishes. I become a transparent eye-ball. I am nothing. I see all. The currents of the Universal Being circulate through me; I am part or particle of God. The name of the nearest friend sounds then foreign or accidental. To be brothers, to be acquaintances,--master of servant, is then a trifle and a disturbance. I am the lover of uncontained and immortal beauty. (CW 1:10)

The differences between the journal entry and its revised form in the essay passage are striking. They reveal Emerson's notion of the sublime as well as his attempt to construct sublime sentences. The most apparent difference is in his attention to detail. In the *Nature* passage, Emerson is careful to catalogue external particulars--time, place, weather, and scenery--and his internal state--he has no thoughts of special good fortune. His method is inductive. Like a scientist, he records his observations to establish the conditions for his finding. His finding, the conclusion of his experiment, as it were, is that he is part or particle of Universal Being. While in the first passage he is "happy in universal relations," in the second he is

"a transparent eye-ball," not only related to universal currents, but their medium. Indeed, the currents of Being are primary, dissolving his particular being--"I am nothing"--into the absolute--"I see all." The sensation of the sublime arises from an insight into the relation between spirit and matter: matter is spirit, part or particle of it. This conclusion depends on induction, by which Emerson sees through matter to the force generating it.

This link between the sensation of the sublime and scientific observation was inspired by the new scientific information of Emerson's historical moment, primarily work in electromagnetism. In 1833, he learned from the British scientist Michael Faraday that matter is comprised of electricity, that things are not discrete and static, but condensations of vast systems of force. This scientific insight became a basis for Emerson's aesthetics, his style.

Another key element of the sublime science also emerges in the contrast between the two passages. In *Nature*, Emerson's language is much denser than in the earlier passage. To mention only a few of its salient stylistic features that will be developed and added to in a close reading of the passage in chapter three: he not only finds the trope of the "transparent eye-ball" to describe his condition, but also suggests, through additional tropes and figures, connections between nature and youth, reason, and faith; he plays on religious symbols, like the snake, and religious terms, like "faith" and "disgrace," in intimating that nature is not fallen and evil but the place for apocalyptic vision; he elliptically alludes to several Biblical passages, such as the baptism of Jesus (his head is "bathed" by spirit, the "blithe air," and he is blessed by God in becoming "part or particle" of Him); he

reinforces the qualities of nature through anaphora (on "In the woods . . . "); he supports the relationship between "I", "eye," and "Being" by using assonance and alliteration in the passages key section ("Standing on the *bare* ground,--my head *bathed* by the *blithe* air, and *uplifted into* *infinite* space,--all mean egotism vanishes. *I become* a transparent *eye-ball*. *I am* nothing. *I see* all . . . "). As these brief remarks suggest and as I demonstrate in a later chapter, this passage is charged on semantic, syntactic, and auditory levels. In translating the 1835 passage into this sequence, Emerson transforms the scientific conclusions of Faraday and others into a sublime writing style, constructed to overwhelm readers as nature did him.

A second salient feature of Emerson's sublime science, then, is his poetics, his compositional practices with their products, and his rhetoric, the effects his compositions have on readers. In revising the first passage into the second, Emerson, like an alchemist, transmutes his raw experience of 1835, through the alembic of his mind, into the golden language of 1836. The *Nature* passage is charged, fashioned to reveal the relationship between matter and spirit. Attentive readers of Emerson experience the sensation of the sublime as they understand this relationship. Overwhelmed, they are pained at their inability to hold all the possibilities of meaning in their minds at one time. Yet, they feel pleasure, as the multitudinous effects of the language intimate the infinite, the beyond. Emerson's linguistic solutions gesture toward the absolute. His style excites readers in the same way that unbounded natural scenes--volcanoes, hurricanes, tornadoes--stimulate beholders.

The purpose of this chapter is to trace each current of Emerson's sublime science--his theory of the sublime, his interest in science, his stylistic practices--and to demonstrate how the three merge in the pattern of his *oeuvre*. In the next two sections, I follow each trend individually, noting its relation to the others. In the final section, I consider them together, demonstrating their interactions, showing them to be prime principles in Emerson's eclectic text. This organization mimics the process it describes.

II. Emerson's Theory of the Sublime

1. Preliminary Remarks

No consideration of the Emersonian sublime can begin without mention of Harold Bloom's revisionary poetics. For Bloom, the American sublime is a "trope" by which a belated poet avoids the influence of a strong father-poet by "*intending* to forget the father in order to present the son or daughter" (*Poetry* 244). The American sublime is the belated poet's "self-begetting," his returning to a creative power prior to the father-poet that allows the younger poet not only to avoid influence, but also to become the *father* of his father. According to Bloom, for Emerson there are two central images leading to the sublime: "all things transparent" and the "Central Man" who sees the transparency and "laws of reality" (246). In *Nature*, for example, Emerson as central man becomes a "transparent eye-ball," losing his individuality (becoming "nothing") while merging with the primal creative force (seeing "all"), forgetting himself to return to a primal poetic self that begets the father (247-48).

More recent critics of the American sublime begin their discussions by agreeing with Bloom's assessment of Emerson, starting with the idea that for Emerson the sublime is primarily an instance of personal and poetic power. For Rob Wilson, the American sublime in the Romantic dispensations of Emerson and Whitman is an "immense nature and force" or representations of it in technologies or texts, with the poet becoming a voice "representing, challenging, if not instantiating those emerging powers" (5). Joanne Feit Diehl seconds this reading of Emerson's sublime, describing it as a moment when the "new man," transformed by the universe flowing through him, "experiences [an] apotheosis . . . one with the world, he assumes its authority, his speech achieving the clarity of cosmic law" (174).¹

These readings are apt, as I shall show, as they emphasize the creativity engendered by the sensation of the sublime. However, they overlook an important component of Emerson's sublime vision: a proper understanding of how nature functions. For Emerson, the one scientifically attentive to the scientific laws coursing through nature is prepared to behold the sublime.

Indeed, it is Emerson's interest in science that separates him from the primary influence on the Romantic sublime, Immanuel Kant. As shown below, while it is impossible to understand Emerson's theory of the sublime without acknowledging his Kantian background, it is a mistake to read Emerson's sublime solely as a product of Kant's aesthetics. As Samuel Monk explains in his seminal study of the sublime, for Kant the sublime is entirely subjective, inspired only by great or energetic natural scenes, and a mixture of pleasure and pain (8-9). For

Emerson, these Kantian ideas are only partially true. For him, the sublime *is* a subjective vision; however, the vision is dependent on a proper scientific, objective understanding of the relationship between matter and spirit. Likewise, while Emerson does believe the source of the sublime is in nature, for him all of nature, not only the great or energetic, is sublime, if properly seen. Finally, while for Emerson the sublime moment is not totally pleasurable, as it strains the faculties, it is more pleasurable than painful, as it results in an insight into the life of things.

2. Emerson and Kant on the Sublime

Barbara Packer provides a good working definition Emerson's "sublime" that leads us to consider its Kantian background: it is, she explains, "Emerson's term for the sudden upwelling of pleasure and awe that occurs when we suddenly perceive the insubstantiality of the world of experience, and hence realize that the common use of the terms 'real' and 'unreal' exactly inverts the truth" (56).

Emerson's "eye-ball" passage indeed intimates that matter is energy, that energy is more "real" than matter. This inversion causes a mixture of pleasure and pain, but leads to ecstasy. A most insightful work on Emerson's sublime underscores the ironic quality of this inversion. In *Emerson's Romantic Style*, Julie Ellison provocatively relates the Romantic sublime to irony, as both cause reversals, or "antithetical conversions" that turn "the mind from God or nature to the self" (7). My analysis of Emerson's theory and practice is inspired by her insight, as I focus on the irony of the sublime moment, which forces one to realize that what seems most familiar and primary is, in fact, not.

For Emerson, the sublime moment is a realization that spirit is most primary, and that matter is a pattern of spirit. In *Nature*, Emerson praises the fact that physics "degrades" the material before the "spiritual," that the astronomer and the geometer "disdain the results of observation" (CW 1:34). He then celebrates the "sublime" remark of the Swiss physicist and mathematician Leonhard Euler, which he found in Samuel Taylor Coleridge's *Aids to Reflection*: (JMN 4:327, 332): scientific laws "will be found contrary to all experience," yet are "true." As will be shown in the next chapter, Emerson learned from nineteenth-century science that spirit--for him synonymous with life, energy, electricity--is primary; it generates, shapes, and motivates matter, which is its pattern, its form. Faraday, in discovering electricity to be the essence of matter, could not *see* electricity; however, this force animates the matter perceived by the senses. The discrete entities of matter perceived in everyday life seem real, substantial; however, science demonstrates that they are patterns of energy, manifestations of an essential underlying power.

But without matter, spirit could not be known. Faraday, as will be shown in the next chapter, needed copper coils to manifest electric forces when he discovered electromagnetic induction; he required iron filings to reveal that electromagnetic energy exists in lines of force. Things, Faraday and other scientists taught Emerson, are presentations of spirit. Nature, Emerson writes in *Nature*, is a symbol of spirit; things are words that express spirit. Without these words/things, spirit would remain unknown. Without spirit, there would be no words/things. The sublime is the revelation of this relationship between spirit and

matter. Euler's remark describes the sublime in stating that visible phenomena are not self-contained and final, but transitory manifestations of spirit. Emerson repeats this idea in *Nature*: "One might think the atmosphere was made transparent with this design, to give man, in the heavenly bodies, the perpetual presence of the sublime" (*CW* 1:8). These "heavenly worlds" are sublime because their rays make the atmosphere "transparent" with "design, because they are visible manifestations of invisible astronomical principles, patterns of their energy. Likewise, the activities of the ant become sublime when "a ray of relation is seen to extend from it to man" (*CW* 1:19). Humankind is related to the universe, including ants, by the "upheaving principle of life." In his journal in 1832, after locating the sublime in several "grand sentiment[s]" of religion, Emerson claims that "there is not a just or grand thought but is made more round & infinite by applying it to the soul considered as the Universe living from God within" (*JMN* 4:39). The sublime flashes forth when we see the connection between individual thoughts, things, and words to God, who generates the universe. The sublime is the sensation of insight, the realization that all phenomena are related to "the depth of the Original" (*JMN* 4:83). Emerson gives his clearest definition in "Fate," where he writes "I know not what the word sublime means, if it be not the intimations in this infant of a terrific force" (*W* 6:29). This terrific force is "unlimited power." "Infant" derives from the Latin meaning "unable to speak." Unspeakable power is an aspect of the sublime; it is a prelinguistic or paralinguistic manifestation through the medium of things. To conceive of things as patterns of this power, not as disconnected particulars, is to perceive

the sublime.

Terrific force is always beyond our mental or linguistic representations of it. For Kant in his *Critique of Judgment*, the sublime occurs when the imagination, like an infant, cannot form a clear image of certain ideas--like the infinity of the mathematical sublime or the force of the dynamic sublime--caused by contemplating phenomena of the universe:

. . . [T]rue sublimity must be sought only in the mind of the judging person, not in the natural object . . . Indeed, who would want to call sublime such things as shapeless mountain masses piled on one another in wild disarray . . . ? But the mind feels elevated in its own judgment of itself when it contemplates these without concern for their form and abandons itself to the imagination and to a reason that has come to be connected with it . . . and finds all the might of the imagination still inadequate to the reason's ideas. (113)

While the superior faculty of Reason (I shall, like Emerson, render Kant's *Vernunft* with a capital "R") can comprehend the abstract notion of infinity in rational terms, the imagination is unable to represent it in an image. This incommensurability between the rational and imaging faculties produces the sublime. While pain arises from the imagination's inability to represent the unboundedness or infinity, pleasure originates from the Reason's comprehension of infinity, the supersensible.

Kant's sublime is based on the impossibility of representation (98) . The sublime is experienced when the perception of a natural scene urges "the mind to

think of nature's inability to attain to an exhibition of ideas" (127). Ideas of the mind are grander in scope than the nature that inspires them because the mind is part of the supersensible, the noumenal realm. Supersensible ideas like infinity, totality, absolute force cannot be presented fully by matter nor by imagination. However, this very inability of matter and the imaging faculty to present totality prompts the Reason's intuition of such ideas. Material objects and the imagination, as it were, provide patterns that gesture toward the unrepresentable; without matter and the imagination, Reason could not intuit. Kant writes that the most sublime passage in the Jewish Law is the commandment "Thou shalt not make unto thee any graven images": the power and magnitude of God cannot be fully presented in concrete imagery. Yet God gestures toward his nature in the Bible in dynamic patterns, like a burning bush, a pillar of fire and cloud, a whirlwind. The sublime emerges when the visible pattern is seen in connection with the invisible force animating it. The pattern doesn't present these forces, but *gestures* toward them.

Hurricanes, tornadoes, the burning bush, a whirlwind, works of art that forcefully gesture toward the infinite: All are sublime. Of the sublime in art, Kant observes "the sublime in art is always confined to the conditions that [art] must meet to be in harmony with nature" (98). Moreover, he intimates that certain artifices, like St. Peter's Basilica, can produce a sublime "bewilderment or kind of perplexity" because "imagination is inadequate for exhibiting the idea of it as a whole" (109). Kant, it should be noted, does not develop the connection between the sublime and art, but only mentions it in asides throughout his third critique. As Paul Crowther suggests in his reconstruction of Kant's implied theory of the

sublime in art, these asides confuse more than clarify (152-156). However, as Crowther argues, if we attend to Kant's remarks on creative genius, we find an indirectly stated theory of how art can generate the sublime just as nature does.²

Kant's formulation of the "aesthetic idea" suggests a sublime art. An aesthetic idea is "a presentation of the imagination which prompts much thought, but to which no determinate thought whatsoever, i.e., no [determinate] concept, can be adequate, so that no language can express it completely and allow us to grasp it" (182). An aesthetic idea produces an image in the imagination that is similar to the sublime scene; it pushes the mind beyond its customary scope of thought. This presentation of imagination creates "another nature" based on "the material that nature gives it" (182). Indeed, for Kant, genius is the ability to mimic nature in artistic creation; it "is the innate mental predisposition . . . through which nature gives the rule to art" (174). Genius creates "another nature" based on the processes of nature. This other nature is generated by the poet's efforts to "give sensible expression to rational ideas of invisible things" (183). Rational ideas are not copies of sensual impressions, but intuitions of supersensible ideas like infinity and totality. The artist can never fully express these intuitions of the supersensible with the imagination, "but ventures to give these [rational ideas] sensible expression in a way that goes beyond the limits of experience, namely, with a completeness for which no example can be found in nature" (183). In constructing the aesthetic idea--the basis for the work of art--the imagination imitates Reason in grasping for the the supersensible in its representations. The more closely these representations gesture toward the supersensible, the more

powerful they are when translated to art. Kant comments on how the imagination's "other nature[s]," its presentations of images, imply, without fully representing, the ideas of Reason: if an aesthetic image exhibits an idea of Reason, then "the presentation [image] aesthetically expands the concept [idea of the Reason] in an unlimited way." When the imagination presents such an image, it "is creative . . . and sets the power of intellectual ideas (i.e., reason) in motion; it makes the reason think more . . . than what can be apprehended and made distinct in the presentation" (183). The image, can, like certain unbounded scenes in nature, stimulate the mind to intuit the infinite. When art incarnates the force or unboundedness in scenes in nature, it is sublime.

Kant's aesthetics came to Emerson by way of Coleridge, who incorporated the philosopher's ideas into his literary criticism. In *Aids to Reflection* and *The Friend*, both read by Emerson around 1830, he invokes the Kantian distinctions between Reason and Understanding. As we know, Reason is the intuitive faculty of the mind, while the Understanding is the logical. In a letter to his brother in 1834, Emerson defines the two categories in terms that echo Coleridge's distinction between Primary and Secondary Imagination.

[R]eason is the highest faculty of the soul--what we mean often by the soul itself; it never reasons, never proves, it simply perceives; it is vision. The Understanding toils all the time, compares, contrives, adds, argues, near-sighted but strong-sighted, dwelling in the present, the expedient, the customary. (*L* 1:412-413)

He restates this distinction in *Nature*, expounding on Reason more fully. The

Understanding treats matter as if it were primary, adding, dividing, combining, and measuring it (*CW* 1:23). On the other hand, Reason perceives "the analogy that marries Matter and Mind" (*CW* 1:23), locating primary reality not in matter, but in spirit as it generates and shapes matter: "When the eye of the Reason opens, to outline and surface are at once added, grace and expression. They proceed from imagination and affection, and abate somewhat of the angular directness of objects. If the Reason be stimulated to more earnest vision, outlines and surfaces become transparent, and are no longer seen; causes and spirits are seen through them" (*CW* 1:30). Emerson indirectly links this "earnest vision" and the revelation of the sublime, as they provide the "happiest moments of life . . . delicious awakenings of the higher powers, and the reverential withdrawing of nature before its God" (*CW* 1:30).

Emerson closely followed Kant and Coleridge in distinguishing between the imagination and Reason. The imagination "may be defined to be, the use which the Reason makes of the material world" (*CW* 1:31). He also repeats Kant in suggesting that the imagination makes another nature. The poet, by using imagination and Reason "unfixes the land and the sea, makes them revolve around the axis of his primary thought, and disposes them anew. Possessed himself by a heroic passion, he uses matter as symbols of it" (*CW* 1:31). In creating these new patterns, the poet links matter to spirit, showing that "the solid seeming block of matter has been pervaded and dissolved by a thought," that there is a "harmony" of "law" underlying all phenomena (*CW* 1:34). Essentially, the Reason intuitively "the instantaneous in-streaming causing power" (*CW* 1:43), the invisible, unrepresentable

force that creates and emanates through matter. This force shapes both matter and the mind of its beholder, thus marrying the two. The poet, in shaping his *materia poetica* into another nature, deepens the mind's relationship to spirit, as he, like spirit, "alters, moulds and makes" matter.

Euler's "sublime" remark that spirit and not matter is most primary is supported by the "sublime conjecture" of the British scientist Humphry Davy that Emerson cites in an early lecture. Davy, an electrochemist whose work will be detailed in chapter two, proposed that there is a "central unity" in nature, a "common law that pervades nature from the deep center to the unknown circumference" (*EL* 2:29). For Emerson, science is sublime when it relates the conclusions of the Understanding to the intuitions of Reason. Those scientists who merely catalogue facts without discovering relations between them, or those thinkers who simply posit a unifying principle, without proving its presence in particulars, are inadequate. However, as the next chapter will show, thinkers like Goethe and scientists like Faraday, both of whom discovered principles of energy that unify the particulars of matter, are "poets of science" (*JMN* 16:250), perceivers and revealers of the sublime, because they strike a balance between the Understanding, observation of individual facts, and Reason, intuitions of the whole. Indeed, Goethe and Faraday, like Emerson, relate their particular experiments, products of the Understanding, to universal spirit, an insight of Reason.

3. Emerson's Scientific Sublime

Science, as demonstrated in the next chapter, motivated Emerson to revise Kant's theory of the sublime. Emerson maintains, with Kant, that the sensation of the sublime is stimulated by a sense of unboundedness and occurs when the imagination is overwhelmed and the Reason stimulated. However, while for Kant the sublime arises when one beholds a boundless scene the meaning of which he cannot image but must intuit, the sublime emerges for Emerson when one perceives the relationship between a particular and the vast, boundless forces animating it. For Emerson, all phenomena, if seen rightly, are sublime. For example, Emerson praises that fact that "The sublime enters into every thing even into a baker's score or a school boy's multiplication table, as Light beams into privies & garrets" (*JMN* 5:24). Moreover, he celebrates the ideas that each grain of water presents the laws of lightning (*W* 10:60), each thing is an emanation of spirit (*CW* 1:124), each fact symbolizes "the Unattainable" (*CW* 2:179). Visible nature is always inhabited by forces too vast for the mind to comprehend: "there is always a residuum unknown, unanalyzable" (*CW* 2:182). The laws of science are concrete manifestations of a mysterious cause: "Away profane philosopher! Seekest thou in nature a cause? This refers to that, and that to the next, and the next to the third, and everything refers . . . Known it [nature] will not be, but gladly beloved and enjoyed" (*CW* 1:124). The smallest phenomenon opens into a world: "The world globes itself into a drop of dew" (*CW* 2: 59). Emerson came to this idea not through subjective speculation, but through his understanding of science. And while the insight that things are windows to the infinite taxes the

faculties, it is the basis of the ecstasy of seeing into "the life of things."

The relationship between science and infinity grew up in the seventeenth century in Europe. As Alexandre Koyre and Marjorie Hope Nicolson notably, among others, have shown, the scientific revolution in Europe during the seventeenth century led scientists and philosophers to question the closed universe of the medieval view and to posit an infinite cosmos. Improvements in the telescope and microscope were largely responsible for this. For the first time, humans could look into the vast reaches of space or see myriad galaxies thriving in a cell. Angus Fletcher observes that it is "strange" that the directness of scientific seeing, through the telescope in the seventeenth century, "should once more be the occasion of those same feelings that characterize man's attitude toward the holy" (*Allegory* 241). Fletcher suggests that the telescope opened up "two new centers of wonder": the "knotted braids of the constellations" and a "new involvement" with nature that expanded the "imaginative boundaries of the mind" (242). Likewise, the microscope, invented about the same time as the telescope, "overcrowded" the mind. James Elkins demonstrates that the early microscopists underwent "visual desperation" as "they struggled to find suitable analogies that would allow them to make sense of what they were seeing." This desperation grew out of a "strained and anxious seeing that casts about, trying to construct analogies and retrieve an unknown form into the fold of vision" (35).

Emerson would have certainly been stimulated by the following account of the vastness of the universe in Sir David Brewster's life of Isaac Newton, which he was reading in the early 1830's. Brewster emphasizes the idea that science reveals

truths that our senses cannot perceive. Scientific facts--such as the sun being stationary and in the "centre of our system," the earth measuring 8000 miles in diameter, the sun being one hundred and ten times as large as the earth, the orbit of the earth being approximately 190 million miles in breadth--"are positions absolutely unintelligible and incredible to all who have not carefully studied the subject." To most men, "the great book of nature is absolutely sealed, though it is in the power of all to unfold its pages," to read "those glowing passages which proclaim the power and wisdom of its mighty Author (262). Attention to the visible patterns, either through the naked eye, the microscope, the telescope, transforms their patterns to windows opening toward infinity. One cannot intuit the the "glowing passages" of the book of nature without first attending closely to its words.

Emerson believed that great scientists like Newton were led to their disciplined observation of nature by a desire to behold the sublime.

What leads him to science? Why does he track in the midnight heaven the pure spark, a luminous patch wandering from age to age, but because he acquires thereby, a majestic sense of power: learning that in his own constitution he can set the shining maze in order, and finding and carrying their law in their mind, can, as it were, see his simple idea realized up yonder in giddy distances and frightful periods of duration. . . . Newton [in formulating his laws] extends that power of his mind not only over every cubic atom of his native planet, but he reports the condition of millions of worlds which his eye never saw. (W 10:130)

Emerson underwent his own experience of the "millions of worlds" which the eye never sees in attending to the zoological and botanical specimens in the Jardin des Plantes in 1833. There, his observation of the physical inspired his intuition of a vast, immanent "upheaving principle of life" that coursed through man and animal and shell.

Ah, said I, this is philanthropy, wisdom, taste,-- to form a cabinet of natural history Here we are impressed with the inexhaustible riches of nature. The universe is a more amazing puzzle than ever, as you glance along this bewildering series of animated forms,--the hazy butterflies, the carved shells, the birds, beast, fishes, insects, snakes, and the upheaving principle of life everywhere incipient, in the very rock aping organized forms. Not a form so grotesque, so savage nor so beautiful but is an expression of some property inherent in man the observer,--an occult relation between the very scorpions and man. I feel the centipede in me,--cayman, carp, eagle, fox. I am moved by strange sympathies; I say continually, "I will be a naturalist." (*JMN* 4:199-200)

This sensation of the sublime seems to have been felt just as deeply three years later, in 1836, when in *Nature* Emerson, metaphorized into the "transparent eyeball," celebrates the overwhelming forces of nature in the face of which he becomes nothing, and sees all. Indeed, Emerson in his prose attempts to transcribe the "millions of worlds" which the eye cannot see, hoping to bless his readers with a vision of the sublime.

Science, as the next chapter illustrates, showed Emerson that nature is a

presentation of unrepresentable principles. To the senses it presents rapid metamorphoses, but the forces that generate this flux are ineffable, beyond the capabilities of the faculties. Jonathan Bishop describes how magnetism, which as Emerson knew from Faraday to be electricity, appealed to the poet: "it is an insubstantial but immense power, present universally but invisibly, acting abruptly, apparently an essential part of the inmost structure of things, yet capable of manifesting itself in simple bits of stone and metal, easily demonstrable by the adept in parlor experiments . . ." (50). Bits of stone and metal gesture toward the power of magnetism, which is immense, invisible, beyond our capacity to image it, yet suggesting infinite, pervasive energy.

Emerson's blending of science and the sublime is present as early as 1834, when he notes that the primary laws of science, those revealed by Newton, Linnaeus, Davy, and G. Cuvier, eventually reveal the "supernatural force" (*EL* 1:80), which is infinite, eternal, beyond presentation. Even the simplest phenomena are sites of the infinite: "For their fine functions and sense stretch away into that other infinity of minute division which the microscope and laws of polarization and chemistry have been opening to man, and there is as great an interval between a grain of sand and nothing as there is between the visible universe and the space in which it is swallowed as an atom" (*EL* 1:78). Science proved the truth of Blake's claim that he could see the universe in a grain of sand. The universe this visionary poet saw--the abyss of Pascal, the infinite glory of Plotinus, the unfolding "deeps" of Emerson--is not stable, but volatile; not calm, but exuberant. As Emerson writes, rephrasing the discoveries of Faraday:

Exaggeration is the law of Nature. . . . Given the planet, it is still necessary to add the impulse; so, to every creature nature added a little violence of direction in its proper path, a shove to put it on its way; in every instance a slight generosity, a drop too much. Without electricity the sky would rot, and without this violence of direction which men and women have, without a spice of the bigot and fanatic, no excitement, no efficiency. (CW 3:107)

Though the forces like electricity could be formulated as laws, they remained always an "amazing puzzle" to Emerson, vast, sublime. His 1877 remarks on Faraday powerfully express the sublimity of science:

What agencies of electricity, gravity, light, affinity combine to make every plant what it is, and in a manner so quiet that the presence of these tremendous powers is not ordinarily suspected. Faraday said, "A grain of water is known to have electrical relations equivalent to a very powerful flash of lightning." The ripe fruit is dropped without violence, but the lightning fell and the storm raged, and strata were deposited and upturned and bent back, and Chaos moved from beneath, to create and flavor the fruit on your table today. (W 10:60)

Emerson here follows an 1857 lecture by Faraday on the conservation of force, in which the scientist stated an insight he had expressed as early as 1834: "What an enormous quantity of electricity . . . is required for the decomposition of a single grain of water" (*Experimental* 861).³ This quantity "is equal to a very powerful flash of lightning" (853). Microcosmic phenomena are presentations of macrocosmic forces. Each visible phenomenon is the product of infinite forces,

exuberant, volatile, world-encompassing energies. This insight concretizes the religious visions of Pascal, who, following Augustine, believed that the God-pervaded universe "is an infinite sphere, the centre of which is everywhere, the circumference nowhere" (2.72). Each center, each point from a star in the vast distance to a mite under a microscope, from "the visible universe" to the "womb of [an] abridged atom" contains "an infinity of universes, each of which has its firmament, its planets, its earth" (2.72). Pascal's intuition that under the "smallest point of nature" there is always "a new abyss" opening is rephrased by Emerson: "under every deep a lower deep opens" (CW 2:179). Both of these apprehensions were verified during Emerson's lifetime by the continuing work in electromagnetism, which showed that all phenomena, from the macrocosmic to the microscopic, are products of vast forces. As the next chapter shows, electromagnetism demonstrated for Emerson the insight of Plotinus that " . . . everywhere there is all, and each is all, and infinite glory. Each of them is great: the small is great; the sun there is all the stars; and every star again, is all the stars and sun; each is mirrored in every other" (5.8.4). While we in our century take such scientific information for granted, nineteenth-century thinkers were awed, bewildered, when first looking through a microscope and learning that Pascal's intuitions were true, or when hearing that Faraday had proved the insights of Plotinus.

Emerson not only saw work in electromagnetism, chemistry, and astronomy as sublime, but also the conclusions of geology. It teaches that the smallest bit of coal is the product of immeasurable force and enormous time. Geologists reveal

coal to be a relic of forests that "existed at an unknown antiquity before the era of the creation of mankind, and by the overflowing of the sea and other changes of the surface had been buried at too great a depth to be reached by man" (*EL* 1:16). These bits of coal were uncovered by ancient "earthquakes or other convulsions of enormous force" (*EL* 1:16). Indeed, in geology, "we have a book of Genesis, wherein we read when and how the worlds were made, and are introduced to periods as portentous as the distances of the sky" (*EL* 2:32). Geology, like electromagnetism for Emerson, introduces us to the "Efficient Cause, *natura naturans*, the quick cause, before which all forms flee as the driven snow, itself secret, its works driven before it in flocks and multitudes . . . an in indescribable variety" (*CW* 3:104). This cause, science teaches, "publishes itself in creatures, reaching from particles to spicula, through transformation on transformation to the highest symmetries, arriving at consummate results without a shock or leap. A little heat, that is, a little motion, is all that differences the bald, dazzling white, and deadly cold poles of the earth from the tropical climates" (*CW* 3:104).

In *Nature* Emerson celebrates this unity underlying phenomena and its complex relationship to words. This unity "lies under the undermost garment of nature, and betrays its source in universal Spirit." Expressions of this insight in words "implies or supposes every other truth." Truths rendered in language are circles on a "great sphere," different manifestations of the same principle: "Every such truth is an absolute Ens seen from one side. But it has innumerable sides" (*CW* 1:27-8). When a thing, thought, or word seen in its relation to macrocosmic spirit, it becomes an instance of the sublime. Because it is a pattern of spirit, it

partakes of the innumerable, approaches the infinite. Each spherule of force, grain of water, eye of a leaf, crocus, word or thought is a pattern generated by the same spirit, and therefore corresponds to all other patterns. As Emerson writes in the 1844 "Nature," again echoing Faraday, "The whirling bubble on the surface of a brook, admits us to the secret of the mechanics of lightning . . . [S]tar, sand, water, tree, man, it is still one stuff, and betray the same properties" (CW 3:105).

Again, these microcosms never fully present the force they manifest, but gesture toward the innumerable, the infinite, the unattainable. Realizing this, Emerson contradicts his claim that words express universal truth. He writes that "Words are finite organs of the infinite mind. They cannot cover the dimensions of what is in truth. They break, chop, and impoverish it" (CW 1:28). Words can simultaneously express and not express the spirit, he suggests. "We aim above the mark to hit the mark," he writes. "Every sentence hath some falsehood of exaggeration in it. For the infinite diffuseness refuses to be epigrammatized, the world to be shut in a word" (CW 3:107). This contradiction suggests that a finite presentation can gesture toward the infinite, that the very failure of presentation, which is painful, can illuminate the infinite, which brings pleasure.

4. Theoptics

In 1832, Emerson began using the heading "Theoptics" to index certain journal entries. The term, Emerson's own (*JMN* 3:263n), marks a moment in which one "sees" God's spirit coursing through matter. These "theoptic" moments are sensations of the sublime. In one such entry, he laments his inability to

experience the "divine principle that lurks within," "of which life has afforded only glimpses enough to assure me of its being." One glimpses this principle in observing nature or in conversing or in reading:

We know little of its laws. . . but we have observed that a north wind clear cold with its scattered fleet of drifting clouds braced the body & seemed to reflect a similar abyss of spiritual heaven between clouds in our minds; or a brisk conversation moved this mighty deep or a word in a book was made an omen of by the mind and surcharged with meaning or an oration or a southwind or a college or a cloud lonely walk--"striking the electric chain, wherewith we are darkly bound." (*JMN* 4:28)

The "radiant gists" reveal the relationship between spirit and matter, shocking one with the sensation of the sublime. Lord Byron in *Childe Harold's Pilgrimage* (4.23) refers to the body as an "electric chain" during a description of how suddenly and unexpectedly we are reminded of past griefs, which like lightning renew the shock of pain (4.24). Emerson appropriates Byron's image to detail a more exhilarating experience of speaking with the divine "out of the clouds and darkness." After we are shocked by this insight into the divine principle for which we and all else are "vehicles," we are transformed, feeling wretched in our inability to sustain the vision, yet yearning always for, always open for, another initiation into the sublime.

In another entry labeled "theoptics," Emerson again details the sublime moment, this time emphasizing how language may prompt it. Like "A prophet waiting for the Lord in vain," Emerson feels hindered from the "immense powers"

that are his heritage. These powers are "mysterious," "painful" laws that strike us "suddenly, in any place; in the street, the chamber, will heaven open & the region of boundless knowledge be revealed . . . The hours of true thought in a lifetime how few!" (*JMN* 4:274). This knowledge is revealed by William Shakespeare, John Milton, Thomas Carlyle, who "call us up into the high region, we feel & say 'this is my region, they only show me my own property--I am in my element, I thank them for it.'" Writers like these craft the "words in a book" (mentioned in the above passage on theoptics) "surcharged" with meaning. They are versions of the "poets of science" Goethe and Faraday who likewise inspire in their readers the sensation of the sublime.

These passages on theoptics illustrate not only the nature of the sublime moment-- the insight of the relationship between spirit and matter--but also the ability of language to engender it by surcharging the mind with meaning. Emerson wishes to be to his readers as Shakespeare, Milton, and Carlyle were to him; he desires to shock them into a recognition of their place in and as the currents of spirit. After this recognition, one lives differently, becomes more attentive, more open. Robert D. Richardson correctly suggests that Emerson's choice of the term "theoptics" was likely motivated by his reading in natural history. As he turned "slowly but inexorably from theology to science," he needed a term like "theoptics" to replace "pantheism" (101). Scientific attention, not passive reception, taught him how to see the mechanics of lightning in a grain of water. Science taught Emerson, Richardson observes, to see with Walt Whitman that "A mouse is miracle enough to stagger sextillions of infidels" (101). Emerson's

visionary moment in the Jardin des Plantes taught him to see differently, to understand the most ordinary as a window to the extraordinary. *Nature*, as shown in chapter three, surcharges readers with "sextillions" of significances, teaching them the miracle of the mouse, the sublimity of the ant.

III. Emerson's Sublime Practice

1. Words are Things

Emerson wished to translate the vast forces of nature into *Nature*. As I detail in the following chapters, he internalized the model of matter revealed by scientists like Faraday and translated it into the formal elements of his essays. As noted above and as I demonstrate in chapter two, Emerson learned from Faraday that things are not discrete and that forces do not act on them at a distance. Things are patterns of vast systems of electrical energy. Faraday taught Emerson that tremendous "agencies of electricity, gravity, light, affinity combine to make every plant what it is"; "[a] grain of water is known to have electrical relations equivalent to a very powerful flash of lightning'." Emerson, for whom "in good writing, words become one with things" (*JMN* 3:271), wanted his words to express the forces of nature. If Goethe and Coleridge provided an artistic model of organic symbolism (as I show in chapter two), Faraday offered a prototype for electromagnetic writing (also shown in the next chapter). Beside Coleridge's plant, Emerson could place Faraday's grain of water.

Sentences should resemble the grain of water containing lightning.⁴

Emerson believed that the "virtue of rhetoric is compression" (*W* 12:290); the

writer should compose "dense," "contracted" sentences resembling the human face, "where in a square space of a few inches is found room for every possible variety of expression" (*W* 12:348). He praised Thomas Carlyle because he "crowds meaning into all the nooks and crannies of his sentences" (*JMN* 5:291). He favorably quoted Friedrich Schlegel's maxim "In good prose, every word should be underlined" (*JMN* 3:271). One should "write that which cannot be omitted; every sentence a cube, standing on its bottom like a die, essential and immortal" (*JMN* 15:259).

Like the grain of water, the dense sentence is galvanized. In 1838, he writes in his journal that good oration, which is condensed rhetoric, is like magnetism, electricity (*JMN* 5:449). Emerson realized that particular words, things, or characters were nothing without electric charge. He writes in his journal that "the needles are nothing, the magnetism all" (*JMN* 9:229). Oration is only great insofar as it is electric. The speech of the great orator "is not to be distinguished from action. It is the electricity of action. It is action, as the general's word or command, or chart of battle, is action" (*W* 8:115).

Powerful language "is an organ of sublime power, a panharmonicum for a variety of note. But only then is the orator successful when he is himself agitated & is as much a hearer as any of the assembly. In that office you may & shall (please God!) . . . let the electricity to part from the cloud & shine from one part of heaven to the other" (*JMN* 7:224-25). Great writing should "become a new & permanent substance added to the world," like matter, arranged and charged by "chemical affinity" (*JMN* 5:92). Writing that does not cohere is akin, he wrote to

Carlyle in 1838, to "infinitely repellent particles" (*CEC* 185). Good poetry, by extension good writing, resides in "the magnetic tenaciousness of the image" (*W* 8:27) and affects readers like an "explosive force" (*W* 8:64). Eloquence fulfills man's "want of electricity to vitalize" his life (*W* 8:70) and "thrills" and "agitates" mankind (*W* 8:73).

His essays were to be dynamic. In good writing, "[w]ords are also actions and actions are a kind of words" (*CW* 3:6). Nature's writing inspires man, who is "born to write," to record nature in a "new and finer form of the original," in a recording "that is alive, as that [nature] which is recorded is alive" (*CW* 4:151). The live words of this writing of nature are, like nature itself, "waves" that cannot be "chained" by "hard pedantry" (*CW* 4:68), "*one thing and the other thing*, in the same moment," not to be "orbed" in a single thought (*CW* 3:139).

The primary vectors of Emerson's sublime style are his tropes. He writes that "The value of a trope is that the hearer is one; and indeed Nature itself is a vast trope, and all particular natures are tropes. As the bird alights on the bough,-- then plunges into the air again, so the thoughts of God pause but for a moment in any form" (*W* 8:15). Emerson here equates troping with the "incessant metamorphosis" of nature, specifically drawing on the word's etymology of "turning." Tropes are actions. They "turn" univocal words into multivalent sites. Just as nature is constantly troping as it proceeds in "perpetual inchoation" and "rapid metamorphosis" (*CW* 1:124), converting "every sensuous fact" into a "double," "quadruple," "centuple," or "much more manifold meaning" (*CW* 3:3-4), so Emerson's tropes, aspiring to be one with things, "flow with the flowing" of

nature, are "fluxional," "vehicular and transitive," expressing "manifold" meanings (CW 3:20). Not only do tropes convey the flowing of nature, but also the shock of its electrical force. In "The Poet," he declares that "An imaginative book renders us more service at first, by stimulating us through its tropes" (CW 3:18-19). "Nothing," he writes, "so works on the human mind . . . as a trope":

"Condense some daily experience into a glowing symbol, and an audience is electrified Put the argument into a concrete shape, into an image,--some hard phrase, sound and solid as a ball, which they can see and handle and carry home with them,--and the course is half won" (W 7:90).

Three of Emerson's strongest readers have discussed the dynamic, unsettling, as it were, shocking nature of his tropes. Stanley Cavell suggests that Emerson's troping is the vehicle of his "onward thinking," of the battle of his thinking to stay fresh and alive, to avert itself from conformity or static conclusion, "to remain in conversation to itself" (*Senses* 134). Harold Bloom has theorized that Emerson's tropes are "life-enhancing" defenses that "burn away context," or the anxiety of oppressive influence, and generate "a pragmatic fresh center," an impulse to create, to act, an attempt to shun influence and be original (*Kabbalah* 118, 120). Richard Poirier suggests that Emerson's tropes are the vehicles for "life, transition, and the energizing spirit," that "turn" his readers to activity and reflection (*Renewal* 16-17). Many other critics have likewise commented on Emerson's dynamic, polysemantic style: Matthiessen, Charles Feidelson, Kenneth Burke, Albert Gelpi, Leonard Neufeldt and Christopher Barr, Barbara Packer, Eric Cheyfitz, and Julie Ellison all develop an aspect of Emerson's style as "flowing,"

"agitated," and/or "dialectic."⁵

Each of these critics touches upon that element of Emerson's style that merges the sublime and electromagnetism. Some of Emerson's close readers have noticed this electrical quality of the prose. John Burroughs, writing of Emerson's style in 1877, claims that it is "akin to that elusive but potent something we call electricity" (192). William James, one of Emerson's most sensitive readers, said in 1903 that Emerson's greatest achievement was as an "Artist" because his "matchless eloquence" "electrified and emancipated his generation" (20). More recently, Barbara Packer has observed that he constructed essays characterized by "ambiguities, lacunae, paradoxes, and understatements" so "generously" placed that the sentences in his essays are "charged terminals that the reader must take the risk of connecting," the reward being "a certain electric tingle" (6). The "multiplicity of . . . conflicting statements" that Matthiessen locates in Emerson, the "volatility" that Eric Cheyfitz finds (xii), are Emerson's deliberate attempts to write the perpetual forces of a charged, agitated, protean universe that cannot be corralled by static language. His sentences, Alan Hodder writes, are like atoms, jewels, or plants (121). Lawrence Buell correctly characterizes Emerson's style as exhibiting "unpredictable, vigorous fecundity" (161).

Emerson's essays are prose poems that praise and write the electric, dynamic, exuberant nature shown to him by the men of science. For Emerson, electric language is poetic. He made no critical distinction between poetry and prose. Fluxional, dynamic language is poetry, whether it appears in a sonnet or an essay. Like Wordsworth, who affirmed that there is no "essential difference

between the language of prose and metrical composition" (163), and like Shelley, for whom "the distinction between poets and prose writers [was] a vulgar error" (484), Emerson claimed that "it is not meters, but metre-making argument that makes a poem" (*CW* 3:6) and that "There are also prose poets" like the Platonist Thomas Taylor (*W* 8:50). Indeed, for Emerson a poet need not write poems at all, but must be "a perceiver & dear lover of the harmonies that are in the soul and in matter, and specially of the correspondence between those" (*L* 1:435).

Composition and poetry are synonymous for Emerson: "a poem . . . shall thrill the world by the mere juxtaposition & inter-action of lines & sentences that singly would have been of little worth and short date. Rightly is this art called composition & composition as manifold the effect of its component parts" (*JMN* 5:39). F.O. Matthiessen explicates this idea: "In declaring that the best prose becomes poetic, that the sublimest speech is a poem, Emerson was voicing the special desire of the transcendentalists to break through all restricting divisions" (22). Indeed, as David Porter correctly observes, Emerson's essays are "consciously crafted and as attentive to form as poetry" (3). This assessment follows one of the first evaluations of *Nature* in an anonymous piece written in *The Democratic Review* in February 1838. The reviewer called *Nature* a "prose poem," asking us to rejoice that "such a poem as 'Nature' is written" (qtd. in Sealts 91). In 1871, James Russell Lowell expressed the same sentiment: "though [Emerson] writes in prose, he is essentially a poet," as one cannot "paraphrase what he says, or . . . reduce it to words of one syllable for infant minds" (qtd. in Konvitz 44). John Jay Chapman championed this view of Emerson's prose in

Nature in 1897 when he wrote in the *Atlantic Monthly* that the essay is a "supersensuous, lyrical, sincere rhapsody" (qtd. in Sealts 123).

2. Emerson's Poetics

In considering Emerson's poetics, we might well begin with Aristotle's *Poetics*, an early effort to define the nature and principles of poetry. In his famous definition, Aristotle claims that poetry is mimetic, an imitation of reality (1447.14-16). He goes on to consider what principles are required for a good imitation, focusing on plot and character in Greek tragedy. Aristotle's *Poetics* is descriptive and prescriptive; he describes the relationship between art and reality as well as the structural elements of tragedy while he also prescribes the principles of a successful work of art. His poetics focuses not on the process of composition, but on its product.

In demonstrating Emerson's poetics, I shall attend to his product, particularly his *Nature*, focusing on its relation to nature, its structural elements, and its poetic prescriptions. We find that Emerson revises Aristotle's poetics; for Emerson the poet does not imitate reality by fashioning copies of reality, but imitates the creator of reality by constructing his own world. The context for Emerson's poetics is the Romantic revolt against the Aristotelian rules and formulas of eighteenth-century, neo-classical aesthetics. Influenced by the sensual philosophy of John Locke, poetics in the eighteenth century, primarily in England and France, was primarily concerned with how sense perceptions imitate the physical world and how words in turn copy sense impressions. For Pope in his

Essay on Criticism, "Nature to all things fixed the limits fit,/ And wisely curbed man's pretending wit" (51-52). The poet is to limit himself to copying nature: "First follow nature, and your judgment frame/ By her just standard, which is still the same" (68-69). Nature is always the same, static, but nonetheless the standard for imitation. The "business of the poet," Samuel Johnson adds through his character Imlac in *Rasselas*, is to discover the general properties in nature and copy them: he is "to examine, not the individual, but the species; to remark general properties and large appearances: he does not number the streaks of the tulip, or describe the different shades in the verdure of the forest" (27). The overly imaginative poet will leave the models of nature behind; his works will be insane (104).

Writers like Coleridge found eighteenth-century canons of taste rigid. As observed earlier, Coleridge had digested the philosophy of Kant, who maintained, against the empirical tradition of Locke, that nature does not shape a passive mind, but adheres to the *a priori* structures of an active one. Put another way, to borrow the phrases of M.H. Abrams, the artist's mind is not a mirror reflecting reality, but a lamp illuminating new creations (*Mirror* 30-69, *passim*). For Coleridge, treatises on poetics during the eighteenth-century propounded the faculty of the fancy at the expense of the imagination. The fancy "has no other counters to play with, but fixities and limits." It is a "mode of Memory emancipated from the order of time and space; while it is blended with, and modified by that empirical phenomenon of the will, which we express by the word CHOICE" (*Biographia* 1: 305). The fancy rearranges the impressions it passively receives; it is comprised

of nothing more than the associative laws of the mind, which distinguish or unite the ideas provided by and limited to sense impressions. The imagination, on the other hand, is creative, not limited to impressions. It has two aspects, primary and secondary. The primary imagination is "the living power and prime Agent of all human Perception, and as a repetition in the finite mind of the eternal act of creation in the infinite I AM" while the secondary, an echo of the primary, "dissolves, diffuses, dissipates, in order to recreate" (1:305). The Romantic poet is not an imitator, but a demiurge. He reshapes nature in his mind, creating a new organism. The poet, Coleridge writes, "must imitate that which is within the thing; that which is active through form and figure, and discourses to us by symbols--the *Natur-geist* . . ." ("Poesy" 259). Coleridge here rephrases the Kantian idealist F.W. Schelling, who maintains that the artist, like a god, creates patterns that reveal the creative spirit immanent in the universe. The poet gives form to spirit, body to soul (447-48).

A Romantic poetics, drawing from Kant's epistemology, emphasizes the poetic process as well as the product. The process is organic; the product an organism. For Emerson, art is nature transformed through the creative imagination: In *Nature* he writes, the "*creation of beauty is art*" (CW 1:16; italics mine). The poet "*forges* the subtile and delicate air into wise and melodious words, and gives them wings as angels of persuasion and command" (CW 1:24; italics mine). The imagination, "the use which the Reason makes of the material world," is constructive, as it conforms not "thoughts to things," but "things to thought." The sensual man, who uses only the fancy, "esteems nature rooted and

fast"; the poet, using imagination, sees nature as "fluid, and impresses his being thereon. To him, the refractory world is ductile and flexible" (CW 1:31). He "delights us by animating nature like a creator" (CW 1:33). Later, in "Intellect," Emerson designates this creative power the "intellect constructive": it is "the generation of the mind, the marriage of thought with nature," the producer of thoughts, sentences, poems, plans" (CW 2:198). This intellectual faculty is a version of the Reason, as it is the Genius that receives a revelation of nature and publishes it in words. For Emerson, the product of this process "adorns nature with a new thing" (CW 3:6). His words are like deeds, "modes of divine energy," "actions" (CW 3:6). His "expression is organic," the form things themselves take (CW 3:15). A sonnet should be a sea-shell or a group of flowers; the ode, a tempest (CW 3:15).

Emerson's *Nature* is his poetics--his theory of creativity and his creation of a nature. It is both about nature and *is* nature. In trying *to be* nature, it is patterned on the insights of the scientists of Emerson's day. In analyzing his poetics in this study, I shall focus on both his principles of composition and the composition itself. For Emerson, the poet composes by translating his insights into nature into the material of his words. Emerson's primary insight is that things are patterns of force. In order to charge his words, the poet must open himself to these forces, channeling them into the new patterns of his words. He "is the conductor of a whole river of electricity" (CW 3:23). He must transform the raw forces of nature into creative power: "man . . . is able to subdue these terrible forces . . . His whole frame is responsive to the world, part for part, every sense,

every pore to a new element No force is but his force. He does not possess them, he is a pipe through which their currents flow. If a straw be held still in the direction of the ocean current, the sea will pour through it as through Gibraltar" (*W* 10:60). All phenomena are patterns of the same energy, and the human organism translates these patterns into patterns of his own making, words.

There is one animal, one planet, one matter, and one force. The laws of light and of heat translate into each other;--so do the laws of sound and color; and so galvanism, electricity, and magnetism are varied forms selfsame energy. While the student ponders this immense unity, he observes that all things in Nature, the animals, the mountain, the river, the seasons, wood, iron, stone, vapor, have a mysterious relation to his thoughts and his life; their growths, decays, quality and use so curiously resemble himself, in parts and wholes, that he is compelled to speak by means of them. (*W* 8:8-9)

Emerson describes the process by which the poet translates force into his art as alchemical; Emerson holds that the poet's mind, his imagination, is an alembic through which nature is transmuted into art. In the words of Schelling in *On the Relation of Plastic Arts to Nature*, the artist engages in "that profound process (analogous to the chemical) whence proceeds, purified as by fire, the pure gold of beauty and truth" (446).

The products of the poet's alchemy are living things, evolving patterns of fluctuating energy. From Faraday's electromagnetic model of nature, Emerson borrowed his linguistic forms. *Nature* is an energy field activated by polarity. In

certain sequences, what I call visionary passages in chapter three, Emerson reveals the relationship between matter and energy in highly charged language. These vectors bear great force, as numerous allusions tropes, and figures are compressed and polarized. The language in these sites is in tension with itself, as positive and negative forces--opposing meanings--attract and repel. The style is agitated, the sentences vigorous.

3. (K)nots

Patterned energy, Hugh Kenner writes, is like a knot. Invoking Buckminster Fuller, he asks us to think of an invisible rope looped into a simple overhand knot. If we pull on the rope, no matter how hard, the knot will not disappear. It is a "self-interfering pattern." In sliding the knot along the rope, we are really sliding the rope through the knot. If we have several different sorts of ropes--hemp, cotton, nylon--we can slide all of them through the knot and it will retain its pattern. The knot is not any of these ropes; it is a "patterned integrity" that the rope renders visible. Like the rope passing through and manifesting the knot, so "the metabolic flow passes through a man and is not the man: some hundred tons of solids, liquids, and gases serving to render a single man corporeal through seventy years he persists, a patterned integrity, a knot through which pass the swift strands of simultaneous ecological cycles, recycling transformations of solar energy" (45-46). This view of nature underlies, Kenner observes, Ezra Pound's definition of the poetic image: ". . . a radiant node or cluster; . . . a VORTEX, from which, through which, and into which, ideas are constantly

rushing" (146; *Gaudier* 92). A vortex, like a knot, like a human, like a word, is not the energy generating it but a pattern made visible by and revealing the energy (146). Emerson expresses a version of this idea in his descriptions of man: "A man is the whole encyclopedia of facts . . . As the air I breathe is drawn from the great repositories of nature, as the light on my book is yielded by a star a hundred millions of mile distant, as the poise of my body depends on the equilibrium of centrifugal and centripetal forces, so the hours should be instructed by the ages, the ages by the hours" (*CW* 2:3-4); and words: "The etymologist finds the deadest word to have been once a brilliant picture. Language is fossil poetry. As the limestone of the continent consists of infinite masses of the shells of animacules, so language is made up of images, or tropes, which now, in their secondary use, have long ceased to remind us of their poetic origins" (*CW* 3:13).

Emerson's compositions are grounded on a knot poetics. "Knot" provides another pattern by which to make visible the complex field of Emerson's style. The coinage is apt for several reasons. First of all, it is a trope that further clarifies Emerson's vectors; it details the structure of the charged moments in *Nature*, which are detailed in chapter three, in which the language becomes a patterned intersection through which numerous ideas and forces constantly rush, a node. Moreover, "knot" derives from the Old English *cnotta*, which means not only "knot," but also a "puzzle." In mimicking and incarnating the "amazing puzzle" of nature that Emerson apprehended in the Jardin des Plantes (*JMN* 4:199-200), his vectors tantalize readers with riddle more than clarify with exposition. Also, a "knot" is a spiraling pattern that breaks the normal flow, be it the flow of

wood or water. Emerson's kinetic passages, in which tropes turn and spiral, are knots that break the smooth flow of his prose. These sorts of knots are nodes, coils. To use the words Gary Snyder employs to describe poetry, they are a "a whorl in the grain . . . [a] vortex" (44). They are swollen whorls, turbulences. They are living things, which are, as Michel Serres writes, "in equilibrium and disequilibrium, a flow, a vortex, heat" (*Genesis* 113); they are, as the poet Snyder writes, "specific turbulence patterns of the energy flow that manifest themselves temporarily as discrete items, playing specific roles and then flowing back in again" (44).

Fittingly, Faraday required a coil, a kind of knot, to demonstrate electromagnetic induction in 1831. By running an electric current through a copper wire tightly wrapped around an iron ring, he found that he could induce an electric current in a separate copper wire entwined on the same ring. He needed a coiled pattern to manifest the electrical energy that comprised matter, to lay the groundwork for the idea that all things are but whirlings of electrical energy. In postulating what Albert Einstein later proved, that matter is energy, that all things are knots, Faraday needed to alter matter. He coiled wire to illustrate that all things are coils of energy. He turned normally straight wire to shock us out of our habitual way of seeing nature. "Common sense" tells us that Newton's worldview is correct, that things are discrete and acted on by external force from a distance. However, we are occasionally jostled from this habitual view when patterns become agitated, when the immense forces underlying matter are revealed in lightning, whirlwinds, tornadoes. Faraday's copper wires, like the whirling of a

tornado, force us to consider the idea that even the most static seeming-stuff is charged.

Tropes, be they constructed by a poet or a scientist alter shapes and speed processes. This altering and speeding reveal that ostensibly stable things are, as Serres observes, a flow of atoms whirled into vortices, "voluminous knots" (*Genesis* 115). These tropes, however, never fully represent the forces that animate them. As Emerson writes, tropes--words and things--"which seem to stand for their own sake, are means and methods only,--are words of God, and as fugitive as other words" (*CW* 2:186). The scientist learns that the laws he discovers are at best "approximations" (*CW* 2:186). Nature, a "dance of hours goes forward still . . . like an odor of incense, like a strain of music, like a sleep, it is inexact and boundless. It will not be dissected, nor unravelled, nor shown" (*CW* 1:125). Indeed, things symbolize the "Unattainable, the flying Perfect" (*CW* 2:179). Electricity cannot be reduced to the things that it animates and that reveal its qualities. Though a grain of water contains "electrical relations equivalent to a very powerful flash of lightning," it does not represent this power as a univocal word represents a meaning. God cannot be reduced to the whirlwind, though the whirlwind reveals his force. Likewise, a human cannot represent the "some hundred tons of solids, liquids, and gases serving to render [him] corporeal" (Kenner 45-46). Emerson's charged sites do not represent electricity, life. They gesture toward it; they are semi-determinate patterns partly revealing indeterminate energy. Emerson's knots are "nots." They never bring to full presence the energy they pattern, but approximate it, intimate it.

4. Emerson's Rhetoric

If poetics is a study of the poet's process and product, rhetoric is an investigation of the relationship between the product and the audience, of the effects of the essay. Aristotle provides an early distinction between the poetics and rhetoric. While poetics is an exploration of a work's structures, rhetoric is "the faculty of observing in any given case the available means of persuasion" (1355.26-27). Rhetoric focuses on how the relationships within the work persuade readers. Emerson's rhetoric is best introduced, though, not by Aristotle, but by another figure from the ancient world, Longinus, who develops a rhetoric of the sublime. What Longinus writes of sublime oratory is true of *Nature's* most rhetorically charged passages. The effect of them "is not persuasion but transport," bringing "power and irresistible might to bear, and reign supreme over every hearer," "flashing forth" to scatter "everything before it like a thunderbolt" (43). Emerson's rhetoric, as I shall show in chapter three, doesn't attempt to persuade readers to subscribe to his view, but instead galvanizes them to become self-reliant thinkers and creators.

Stanley Cavell provides the key to Emerson's rhetoric when he writes that Emerson's language provokes readers into thinking by "averting" them away from "conformity," "converting" them to attend the nuances of every word (*New* 81). Emerson shows his readers that "words demand conversion or transfiguration or reattachment" (82). Cavell reminds us that Emerson's rhetoric is based on the maxim in the "Divinity School Address": "Truly speaking, its is not instruction,

but provocation that I receive from a great soul." Emerson's own conversions, his turnings of words, provoke readers to redeem words, convert them not into univocal signs, but into sites of risk, of thinking. We are taught by Emerson, as Cavell argues, to redeem words through attention. Cavell notes that while Emerson appears to be playing "fast and loose with something like contradiction in his writing," his contradictions can be seen as "the countering of diction," which is the "genesis of his writing of philosophy." The contradictions in Emerson's style are set against "dictation." The "avert" readers from conforming to the linguistic meanings handed down from philosophical, religious, cultural traditions; they "convert" them to attend to each word closely in order to redeem it from the past and make it live in the present. Each word, Emerson implies, must be converted, transfigured, reattached to the world; the must be led home, "as from exile," to the living speech of fresh ideas (*New* 81).

As I shall demonstrate in chapter three, Emerson demands this level of attention by fashioning highly charged passages that shock readers into an awareness of the density of words. These vectors overwhelm readers with effects, urging them to follow carefully passages, paragraphs, sentences, words. After being taxed by the rhetorical charges of the "transparent eye-ball" passage, for example, readers will never read Emerson the same way. They will be alert to puns, paradoxes, catachreses, even in the most ordinary-seeming passages. The "eye-ball" passage offers a theoptic moment, providing a linguistic model of the relationship between matter and spirit. It is a site of extreme linguistic agitation that shocks readers into an awareness, encouraging them to "redeem" other words

in the essay, to convert them into patterns of energy, intensities. These charged sites, like voltaic piles, decompose the hermeneutic habits of readers, forcing them to recompose new, more attentive interpretive strategies. Emerson views decomposition as a preparation for creation: he observes in that "new continents are built out of the ruins of the old planet; the new races fed out of the decomposition of the foregoing. New arts destroy the old" (CW 2:180). "[D]ecomposition is recomposition," signaling "new creation" (CW 4:46). These sequences remind readers that "[t]here are no fixtures in nature," [t]he universe is fluid and volatile," "permanence is but a word of degrees" (CW 2:179); they "smite" and "arouse" us with "shrill terms," breaking our "whole chain of habits," urging us to "open" our eyes "on our own possibilities" (CW 2:185).

The result of Emerson's poetics, the rhetoric, does not instruct, but "agitates" and "provokes," as he says powerful rhetoric should (W 8:73). As James Berlin has shown in his excellent study of Emerson's rhetoric, Emerson's style had not to do with self-expression, but with a dialectic concerned with reaching the Understanding and inspiring the Reason of his auditors and readers. Believing that expression of thought was central to democracy, he wished to convert his audience into *rhetors* in their own right, an idea developed later in this chapter and in chapter three (43-57, *passim*).⁶ Berlin touches upon the key point in Emerson's rhetoric: his wish that his language would inspire creativity in his audience.

In the lecture "Art and Criticism," Emerson offers three requirements of powerful rhetoric. First, the *rhetor* should use living words--the vernacular, idioms, slang. He should "convey his meaning in terms as short and strong as the

smith and the drover use to convey theirs" (W 12:285). Using the *lingua franca*, the orator, like a magnet, attracts his audience, speaking in the vivid words by which they describe their world; like a battery, he charges them with voltage, manipulating the mother-tongue into vigorous figures. The second "virtue of rhetoric is compression" (W 12:290). As mentioned above, for language to be powerful, it must be dense, crammed with significance. Writing is "the science of omitting" (W 12:290). A third "principal power of rhetoric" is metonymy, "using one word or image for another" (W 12:299-300). This broad definition of metonymy suggests that Emerson is using the term as a metonymy for "trope." Quintilian defines a trope, as opposed to a figure, as "the artificial alteration of a word or phrase from its proper meaning to another" (*Institutes* 8.2.44-47). A trope occurs when a word or image is taken from its customary ("proper") context to another.

The result of this rhetoric is what Emerson calls "eloquence," which he describes in an 1847 lecture of that name. Eloquence, fittingly, is magnetic: it is "attractive," requiring a rare "coincidence of powers, intellect, will, sympathy, organs, and, overall, good fortune in the cause" (W 7:76). The pole of the orator attracts the pole of the audience; they merge in a meeting of personal powers: eloquence occurs "wherever the polarities meet" (W 7:95). However, this attraction is not free of tension; indeed, once the orator has drawn the audience to his words, he shocks them: the eloquent man "is . . . no beautiful speaker, but . . . is inwardly drunk with belief. It agitates and tears him, and perhaps also bereaves him of articulation. Then it rushes from him in short, abrupt screams, in torrents

of meaning" (*W* 7: 92). These two qualities, magnetism and electricity, make eloquence "the order of nature itself, and so the order of greatest force, and inimitable by any art" (*W* 7:93).

IV. The Reader's Muse

1. Weiskel's Semiotic Sublime

Thomas Weiskel, in his study of the sublime of British Romantic poets, provides a frame for picturing the interactions among the Emersonian tendencies we have thus far been considering. He theorizes that the sublime occurs in the mind of the poet in three phases during which his linear, comprehensible reading patterns are suddenly disrupted by the sublime, be it in the form of disruptive language or nature, which forces him to create his own tropes. These phases can take place not only in the poet, but in the ordinary interpreter of language or nature. In the first phase, the mind is in a harmonious relationship to the object it attends. This is a state of "normal perception or comprehension, the syntagmatic linearity of reading or talking a walk or remembering or whatnot" (23). This "habitual relation of mind and object" suddenly is disconnected in the second phase. We are surprised or astonished, as "[e]ither mind or object is suddenly in excess" and the relationship between mind and object, word and meaning, becomes indeterminate. It occurs, for example, when we are reading and "a text . . . exceeds comprehension, . . . seems to contain a residue of signifier which finds no signified in our minds" (24). In the third and final phase, the mind recovers a balance between itself and the world, the text, by realizing that the indeterminacy

that erupted in phase two symbolized "the mind's relation to a transcendent order" (24). In this phase, we realize that our inability to present, to image, the world in phase two was an intuition of a beyond, a "meta" world, the unattainable.

Weiskel provocatively details the transition from phase two to phase three as a process of troping. Faced with the indeterminacy, the poet or reader can recover a sense of balance with the world or text either metaphorically or metonymically. The metaphorical sublime "resolves the breakdown of discourse by substitution" (28). By substituting the "transcendent," "the spiritual," the "daemonic," etc. for the indeterminacy, one is able to identify with it, restore some sort of relation to it. For example, the metaphorical sublime occurs when one is faced with the absence of meaning in trying to grasp a religious mystery or unbounded nature and then makes this absence significant by substituting "God" or the "absolute" for it. Weiskel notes that the metaphorical is the reader's sublime because it is the mechanism by which one reads obscure texts and disruptive nature (29).

The metonymical sublime works by displacing "its excess of signified into a dimension of continuity which may be spatial or temporal" (29). The metonymical is primarily the poet's sublime, the process by which he diffuses the energy of the disruption into language, spreads its force into his text. For example, when Wordsworth's mind is "overwhelmed by meaning," he displaces the the excess meaning, by way of metonymy, throughout nature:

And I have felt

A presence that disturbs me with the joy

Of elevated thoughts; a sense sublime
 Of something far more deeply interfused,
 Whose dwelling is the light of setting suns,
 And the round ocean and the living air,
 And the blue sky, and in the mind of man:
 A motion and a spirit, that impels
 All thinking things, all objects of all thought,
 And rolls through all things. (qtd. in Weiskel 29)

For Weiskel, the most powerful, original poets occupy both positions--reader and poet--at once, simultaneously substituting their genius for the disruptive power and expressing by spreading it in their words (31-33).

In the "transparent eye-ball" passage, Emerson, like Wordsworth, enacts the poet's and reader's sublime. Walking across the common, he is in a normal, habitual relationship to nature, in which snow puddles, field, and sky are distinct. His detailed, almost scientific attention to physical events leads to phase two. While feeling the contradictory sublime feelings of fear and joy, his relationship to the landscape becomes indeterminate, overwhelming. At the point where "all mean egotism vanishes," he is in phase two, consumed by the infinite. His observations of the physical have led to an insight of the metaphysical. In the midst of indeterminacy, he immediately tropes his way to phase three, a new relationship to the inscrutable, metaphorically substituting a "transparent eye-ball" for his ego, relating himself to Universal Being. Simultaneously, he metonymically displaces the force of Universal Being into a circulatory force of

which he is but a part. His scientific observations have produced a conclusion about the relationship between spirit and matter, energy and its patterns.

As will be shown in chapter three, this process of dissolution and solution likewise takes place in readers of this passage in *Nature*. Emerson in this and other key sequences packs words with meaning, shocking readers with the electricity of his prose. These passages produce the effects that Paul Goodman relates to a sublime style: "an absolute overstraining of the faculties," a "temporary breakdown of the faculties" (254). The most extreme case of the artistic (as opposed to the natural) sublime occurs, as in *Nature*, when the "presentation [of the work] is unifiable on an indefinite number of interpretations but the higher meaning of this plurality is not to be grasped by any act of imagination, feeling, or thought" (254). For example, the ambiguous messages of the Delphic Oracle or theological mysteries, or a symbol like Nathaniel Hawthorne's black veil in "The Minister's Black Veil," disseminate meanings that force us "to think and feel beyond what is presented" (253). Emerson's sublime passages, like those of Hawthorne, analyze--break down--the faculties, forcing readers to synthesize--piece together--new formations of thought and language.

2. Brilliant Discourse

An example from *Nature* will clarify this overlapping of the sublime, science, poetics and rhetoric. This example prepares us, too, for the close readings of *Nature* in chapter three. In the "Language" section, Emerson depicts a speaker simultaneously experiencing the sublime and creating his own tropes. In

describing this speaker, he recalls the threefold process that takes place during the "transparent-eyeball" passage: the speaker is first in a habitual, ordinary relation to his environment; then, he is overwhelmed by the sublime; he then, by making his own tropes, fashions a new way of relating to his environment. The same threefold process takes place in readers attending to Emerson's own language.

After lamenting the decay of language, Emerson asserts that wise men again fasten words to visible things, so that "picturesque language" shows that one is "in alliance with truth and God." He continues:

The moment our discourse rises above the ground line of familiar facts, and is inflamed with passion or exalted by thought, it clothes itself in images. A man conversing in earnest, if he watch his intellectual processes, will find that always a material image, more or less luminous, arises in his mind, cotemporaneous with every thought, which furnishes the vestment of the thought. Hence, good writing and brilliant discourse are perpetual allegories. This imagery is spontaneous. It is the blending of experience with the present action of the mind. It is proper creation. It is the working of the Original Cause through the instruments he has already made.

(CW 1:20-1)

Emerson is describing a sublime moment. When a speaker is overtaxed by thought and emotion, he immediately "clothes his thought in images," or transmutes the indeterminacy of his thought and emotion into images. The seer in this passage becomes a sayer.

Emerson's language in this passage is agitated; it imitates the fiery passion

and expanding thought of the discourser and, indeed, casts readers as brilliant discourser. His language, like that of the discourser, swells with excitement, rises above the ground line of familiar facts. "Ground" is a pun for the earth, the foundation, a zero charge of electricity. When language rises above the ground, it is charged, electrified, becoming both volatile, "enflamed," and increased in power and size, "exalted." Figuratively, it is sublime, above the ground, lofty, extraordinary, not "grounded" in the habitual. This energy must be "clothed" in images. This "clothing" is a catachretic metaphor, as the idea of fire being clothed strains logic. Expanding fire and electricity will be "clothed" only momentarily by images, as the cloth will be consumed or ripped by the flames. The energy of the discourse, then, will and will not be clothed; words will and will not express. This metaphor then, is a synecdoche for the sublime, which occurs when patterns "express" by gesturing but do not express by representing.

This Emersonian vector overwhelms readers with auditory effects as well. His style converts readers into figurative interpreters just as Puritan sermons alerted auditors to the possibility of being graced. Anne Kibbey has reminded us of how the Puritan sermon treated figures of speech not only as manipulations of the meanings of words, but as palpable figures that would affect the hearer on a bodily level. She shows how John Cotton's use of paronomasia constructed subtle, subliminal meanings that reinforced his overt message by "getting under the skin," as it were, of his listeners. Cotton defines paronomasia primarily as "the repetition of like sounds, yet somewhat differing" (Kibbey 13). For him, paronomasia includes repetitions not only of complete words, but also of

letters and syllables. He constructed sermons in which phonic patternings reinforced semantic meanings. Emerson clearly places himself in this tradition, though he wishes to convert his hearers not into Congregational saints, but into creative interpreters. In the above passage, Emerson's sound effects support his message. "The moment our discourse rises above the ground line of familiar facts, and is inflamed with passion or exalted by thought, it clothes itself in images." The key word in the passages is "rises," as it details the direction of passion, thought, and language as well as suggests the sublime, which primarily means "lofty." The word itself seems to rise, as its long "i" sound rhymes with "high." Several "i" sounds throughout the passage, primarily short ones, support this echoing. The long "i" in "line" is echoed by the short "i" sounds in "is," "inflamed," "it," "itself," "in," and "images." Each of these "i" words is key in the semantics of the sentence. The "line" is the monotony of habit that the sublime "rises" above. "Inflamed," connected to rising discourse by "is," describes the indeterminacy of the sublime, and "it" and "itself" refer to "rising" discourse that is clothed in "images" while the one experiencing the sublime creates his own tropes. "S" sounds, also prominent in "rises," likewise pervade the passage in "is," "passion," "exalted," "clothes," "itself," and "images." These sounds make the passage hiss with the smoke of the flames as the "i's" rise. Also, just as "i" rhymes with "high," "s" rhymes with *esse*, Latin for "to be." For Emerson, "to be" truly is "to rise," to feel the upwelling of sublime energy. Likewise, "to be" is to "essay," to write, to clothe fiery thought in images. Taking a cue from Emerson's claim that he would "essay to be," Joel Porte has shown that Emerson in his essays

"dares, endeavors, tries, attempts . . . to create himself" (153). Indeed, throughout the passage we hear a faint rhythm of *I-esse*, a nexus that supports the heart of the passage and Emerson's project: the *I* is by *essaying* the sublime.

The next sentence proceeds to describe this complex process by which one inscribes the sublime: "A man conversing in earnest, if he watch his intellectual processes, will find that a material image, more or less luminous, arises in his mind, cotemporaneous with every thought, which furnishes the vestment of that thought." A man "conversing" finds that "material" image--a visible furnishing, a massy vestement--rises in his mind along with thought--invisible and weightless--to provide the clothing of that thought. Another paradoxical, catachretic metaphor appears: a material image is made to rise as if it were invisible and weightless like thought. This image "furnishes" the vestment for thought. "To furnish" is a catachretic metaphor as well; it means to provide, but also to furnish, to place furniture in a house. Does the image then provide a perfectly fitting garment for thought or does it clutter the mind with unnecessary furniture? Other questions riddle us: why is the image more or less luminous? Is it more or less consumed by the flames of fiery thought?

In calling the image that arises with thought "luminous," Emerson elliptically alludes to the Bible. The brilliant discourser is in a position similar to God in the first chapter of *John*, where His creative Word is made flesh. God's *logos*, his son, is his Word clothed in material: "In the beginning was the Word, and the Word was with God, and the Word was God." In him "was life; and the life was the *light* of men" (1:1-4; italics mine). Like God's *logos*, the words of this

speaker clothe the invisible and are luminous. However, unlike the *logos*, which fully embodies and represents God on earth, the words of the brilliant discourses do not fully incarnate and depict their meaning. Indeed, their meaning consumes and destroys them, burning them with fiery passion, ripping them with expanding thought. Ironically, the words are "vestments," robes worn by priests in celebrating the Eucharist, a festival that commemorates the relationship between *logos* and God, a communion of symbol and meaning. But the discourses' "vestments" do not symbolize union between word and meaning, visible and invisible. Indeed, the discourses' words are really *anti*-vestments, as they suggest a problematic *logos*. Emerson has revised the *logos* in light of his idea of scientific sublime, which articulates a book of nature whose words are not univocal signs, but polyvocal turbulences.

This process of clothing thought is spontaneous, as fiery and exalted discourse "clothes itself." However, Emerson seems to contradict this statement in claiming that if a man "watch his intellectual process" he will find that the image rises with the thought. The process is paradoxical, both spontaneous and conscious.

At this point, the pattern of language has become indeterminate. It is bewildering. It seems as if Emerson senses this indeterminacy in his own language, as the remainder of the passage is comprised of simple sentences meant to clarify the baffling process of turning fiery thought into words. He labels the process of clothing thought "conversing," followed a series of seven metonymic displacements that associate "conversing" with "good writing," "brilliant

discourse," "perpetual allegory," "spontaneous imagery," "blending of experience with present action of the mind," "proper creation," "working of the Original Cause."

The seven metonymies restore a balance between dissolution and solution, centrifugal and centripetal. Emerson has moved from the indeterminacy of his own language by troping: he has substituted the metaphor of "conversing" for the process of composition, followed by metonymies that displace its surplus of meaning. The metonymies literally "slow down" the quick turnings of the agitated site, as each of the seven sentences are monotonously patterned with "subject-copula-complement" structures. This syntactic parallelism itself is slowed down by the anaphora of the last three sentences, each of which begins with "It is . . .," further reinforcing the return to stasis. Emerson like an alchemist has turned down the flame under the alembic of his essay, settling the fluid after the vigorous sublimations of language.

The readers, then, are in the same position as the brilliant discourser and Emerson. They are overwhelmed by linguistic force. Emerson has compressed several tropes and figures into this brief passage, affecting readers on semantic, syntactic, and auditory level. In doing so, Emerson has taught them how to read: Overcome with an abundance of effects, both sense and sound, they must slow down and connect them with a trope. Emerson's troping here implies its own ideal reader who will weave indeterminacy into dynamic tropes. Emerson's sentences affect readers like a voltaic pile, decomposing and recomposing their faculties. In experiencing Emerson's vectors, the minds of readers are dissolved, diffused, as

their interpretive habits are overburdened, broken down. In refiguring a hermeneutic practice, readers create new tropes by which to pattern Emerson's style.

Indeed, any interpretation of the sublime will be only partial, an approximation. What Friedrich Nietzsche, an Emersonian adept, says of statements of truth applies to interpretations of the sublime.⁸ Nietzsche claims that the "thing in itself," which is what pure truth, could it be understood, would be, is "quite incomprehensible to the creators of language" and thus not really "worth aiming for." In the absence of absolute truth, humans have only language, the tool by which they relate to unknowable things by interpreting them in human terms: "One designates only the relations of things to man and to express them one calls on the boldest metaphors." Truth, then, is not absolute and objective, but an interpretation in language, a "mobile army of metaphors, metonyms, and anthropomorphisms--in short, a sum of human relations, which have been enhanced, transposed, and embellished poetically and rhetorically" (*Portable* 45-47). Nietzsche embarks on this analysis of the function of tropes to illustrate how the desire for truth has led to delusion. Transferred to another context, his analysis provides a useful gloss on how humans relate to the sublime. The sublime is beyond images and words; but it can be intimated in words and images that gesture beyond, that express the indeterminacy that is its heart. Like Nietzsche's "thing in itself," the sublime is beyond human ken, will never be accurately named; it can only be gestured by linguistic patterns, figured by the agitations, the sudden leaps and alterations of dynamic troping.

Emerson's sublime science prescribes a science of interpretation. The method is delineated, again, in the "eye-ball" passage. Readers, like Emerson's Visionary, should attend closely to words, as a scientist examines a sample. If they attend properly, that is, intently and closely, they will discern connections between specimens and the forces underlying them. Then, they will be agitated by the sensation of the sublime, feeling themselves part and particle of the infinite. This sensation elicits not passive acceptance, but active interpretation.

3. Creative Reading

Emerson's essay is a hermeneutic invitation. His tropes emancipate the understanding from the tyranny of one meaning for one word. His words work against lethargy, habit, stagnation and toward self-reliance. His trope or symbol has a certain power of emancipation and exhilaration of all men. We seem to be touched by a wand, which makes us dance and run about happily, like children. We are like persons who come out of a cave or cellar into the open air. This is the effect on us of tropes, fables, oracles, and all poetic forms. Poets are thus the liberating gods. Men have really got a new sense, and found within their world another world or nest of worlds; for the metamorphosis once seen, we divine that it does not stop. (CW 3:17)

Emerson's tropes, as will be seen in chapter three, liberate readers from seeing language as univocal, things as discrete and static. He teaches that under each word and thing is million worlds.

As Barbara Packer has pointed out, Emerson has a "deep" style, "one that challenges the reader to intellectual activity" (6). An early reader of Emerson, W.C. Brownell, suggested that interpreting an Emerson essay "requires virtues much more strenuous than passive receptivity" because "Everything means something additional. To take it in you must go beyond it. The very appreciation of an essay automatically constructs a web of thought in the weaving of which the reader shares" (6). Packer observes that for inactive readers, Emerson's sentences "lie upon the page like steel filings when no magnet is present" (7), while active readers are rewarded with a "certain electric tingle" (6). Alan Hodder agrees with Packer in claiming that Emerson deliberately frustrates "a habitually discursive reading" (131). His sentences were "not composed to yield up meaning passively, for the meaning is wound tightly in each sentence structure" (131). In order to make sense of *Nature*, Hodder continues, we "need to adjust our normal reading habits" (133). Instead of searching for discursive continuity, readers must meditate on individual sentences, "small models that contain the wholes," and forge the links, the transitions, between them. *Nature* is replete with what Wolfgang Iser calls "gaps," locations of indeterminacy that engage readers to communicate with a text, to participate in the construction of its meaning. The more gaps, the more readers are engaged. As Hodder notes, there is not a more gap-ridden text than *Nature* (138).

Emerson's essay, then, becoming itself a reader's muse, engenders creative interpretation. As Philip Gura has demonstrated, Emerson, influenced by the hermeneutics of the German Higher Criticism inflected through work of Coleridge

and James Marsh (who edited and introduced *Aids to Reflection* in 1829) believed in the power of interpretation to unlock and ground divine mysteries. Marsh believed that Scripture could not be understood with the Understanding, but only through the Reason. Those reading the Bible with Understanding would attempt to reduce verses to one meaning, while those interpreting with Reason would intuit the divine mysteries of the Holy Writ. Using a Reason-driven hermeneutic, one views words as "alive" with God, pregnant with divine meaning (39-46). Another of Emerson's contemporaries, the theologian Horace Bushnell, pushed this hermeneutics of Reason to an extreme when he wrote that "the second, third, and thirteenth sense of words--all but the physical first sense--belong to the Empyrean, and are given as we see in the prophets, to be inspired by" (qtd. in Gura 53). Emerson interpreted both nature and scripture with this joy in semantic exuberance. Modeled on nature and scripture, his own essays, Bibles of nature, likewise instruct readers in the hermeneutics of Reason.

In *Nature*, Emerson "muses" readers, inspires them away from slavish, paraphrased interpretations and toward creative ones. Opposed to the "silkworm" who creatively tropes, the uncreative reader is the "bookworm." He is the "meek young m[a]n" who believes it is his "duty to accept the views" of those he reads; who values books "as such; not as related to nature and the human constitution, but as making a sort of Third Estate with the world and the soul"; who restores readings, emendates, is a bibliomaniac (CW 1:56). The bookworm does not read that he may write, but that he may memorize.

Creative readers, on the other hand, treat texts not as signs, but as symbols,

as multivalent tropes that in turn inspire their own musings. Emerson emphasizes the relationship between interpreting and troping in the "Divinity School Address," where he writes that "Always the seer is the sayer" (CW 1:84). Intuition motivates tuition. Vision is clothed in language. An Emersonian thinker/writer is a creative reader: "One must be an inventor to read well . . . There is . . . creative reading as well as creative writing. When the mind is braced by labor and invention, the page of whatever book we read becomes luminous with manifold allusion. Every sentence is doubly significant, and the sense of our author is as broad as this world" (CW 1:58). Creative readers discover the text to be highly figurative, dense with manifold allusion, luminous with energy. They are no longer inhabited by thought, but "Man Thinking." This insight into the relationship between word and meaning should inspire new creation, as books "are for nothing but to inspire" (CW 1:56). Readers should not read simply to learn facts, but to create. Proper interpretation, Emerson writes in *Nature*, should be as creative as the text being interpreted: "Every scripture is to be interpreted by the same spirit which gave it forth" (CW 1:23).

As will be illustrated, Emerson's rhetoric does not merely, as Kenneth Burke argues, carry readers across the bridge from the natural to the supernatural (156-57), but converts readers into trope-makers. In *Emerson on the Soul*, Bishop shows the effect Emerson's sentences had on readers by quoting their reactions. Moncure Conway's reads like a conversion narrative as he tells of the experience he had while reading Emerson. After lamenting over his lack of prospects, the young Conway gives into depression by going alone into the woods.

Utterly miserable, self-accused amid sorrowful faces, with no outlook but to be the fettered master of slaves, I was then wont to shun the world, with a gun for apology, and pass the hours in this retreat. So came I on a day, and reclined on the grass, reading a magazine casually bought . . . Nature had no meaning, life no promise and no aim. Listlessly turning the printed pages, one sentence caught my eye and held it; one sentence quoted from Emerson, which changed my world and me.

A sentence only! I do not repeat it: it might not bear to others what it bore to me: its searching subtle revelation defies any analysis I can make of its words. All I knew is that it was the touch of flame I needed. That day my gun was laid aside to be resumed no more. (qtd. in Bishop 145-46).

While Conway feels the flames of Emerson's words in his conversion, John Albee undergoes agitation and satiation. He recalls that upon picking up *Representative Men* in a book store

I read a few pages, becoming more and more agitated, until I could read no more. It was if I had looked in a mirror for the first time. I turned around, fearful lest someone had observed what had happened to me; for a complete revelation was opened in those few pages, and I was no longer the same being who entered the shop. These were words for which I had been hungering and waiting. (qtd. in Bishop 146).

John Jay Chapman's described his experience of reading Emerson even more concretely: "His words . . . sparkle in the mine, or you may carry them off in your pocket. They get driven into your mind like nails, and on them catch and hang

your own experiences, till what was once his thought has become your character" (qtd. in Konvitz 108).

Each of these readers responded to Emerson's prose by writing. Indeed, it is fascinating to note how many writers, like Whitman, were simmering until Emerson's tropes brought them to a boil. This list would include not only Thoreau and Whitman and the three writers mentioned above, but also William James, John Dewey, and Wallace Stevens. Attentive readers of Emerson, like these writers, open themselves the the tingle of the prose. Doing so, in the oven of their own imaginations, sensations are sublimed into tropes of gold.

Notes

¹For background work on the sublime, see Samuel Monk, *The Sublime: A Study of Critical Theories in XVII-Century England*, Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite*, and James B. Twitchell, *Romantic Horizons: Aspects of the Sublime in English Poetry and Painting, 1770-1850*. Another excellent text on the sublime, Thomas Weiskel's *The Romantic Sublime*, will be addressed later in this chapter.

²I mostly follow Crowther's remarks in discussing the relation between Kant's theory of the sublime and art.

³For citations of Faraday's *Experimental Researches in Electricity*, I use paragraph numbers instead of page numbers, as each paragraph is numbered in his text.

⁴For a good discussion of Emerson's theory of compression, see Sutcliffe (87-97).

⁵Emerson's "flowing," "agitated," and/or "dialectic" style has been noted often, though not in the context of electromagnetism or metalepsis. Other important works on Emerson's dynamic troping by Cavell, Poirier, and Bloom are Cavell's *This New Yet Unapproachable America* and *The Quest of the Ordinary*; Poirier's *A World Elsewhere: The Place of Style in American Literature and Poetry and Pragmatism*; and the chapters on Emerson in Bloom's *A Map of Misreading*, *Poetry and Repression: Revisionism from Blake to Stevens*, and *Agon: Towards a Theory of Revisionism*. The first critic to bring to light Emerson's dialectic style was Kenneth Burke in "I, Eye, Ay--Emerson's Early Essay 'Nature': Thoughts on the Machinery of Transcendence." Warner Berthoff's essay on Emerson in *Fictions and Events: Essays in Criticism and Literary History* also notes Emerson's dialectic style, as does Julie Ellison's *Emerson's Romantic Style*. Several other critics have developed some aspect of Emerson's disruptive form. For other work on Emerson's style, see Matthiessen (64-70); Feidelson (112-212); Albert Gelpi, "The Paradox of Organic Form" (passim); Barbara Packer, *Emerson's Fall: A New Interpretation of the Major Essays* (1-21); Leonard Neufeldt, *The House of Emerson* (53-71); Neufeldt and Christopher Barr, "I Shall Write Like a Latin Father': Emerson's 'Circles'" (passim); Eric Cheyfitz, *The Trans-Parent: Sexual Politics in the Language of Emerson*; and Ellison (8-10,

196-208).

⁷Berlin discovers two tendencies in scholarship on Emerson's rhetoric. One tendency has been to read his rhetoric in the Platonic tradition, viewing him as "a romantic individualist, concerned primarily with rhetoric as the expression of the self, without regard for political or social concerns" (43). This group includes, as Berlin notes, Roberta K. Ray, "Role of the Orator in the Philosophy of Ralph Waldo Emerson"; Sheldon W. Liebman, "Development of Emerson's Theory of Rhetoric, 1821-1836"; Roland F. Lee, "Through Kierkegaard: Toward a Definition of Emerson's Theory of Communication"; John H. Sloan, "The Miraculous Uplifting: Emerson's Relationship with his Audience." The critics practicing second tendency have interpreted Emerson's rhetoric as an example of "his commitment to democracy," as "his positioning of the rhetor at the center of political and social action" (43). Berlin includes the following in this group: William S. Tacey, "Emerson on Eloquence"; Herbert A. Wichelns, "Ralph Waldo Emerson." This study indirectly places Emerson between both positions, suggesting that his rhetoric is a vehicle of "Platonic" insight, of revelation, but also intimating that his eloquence is committed to moral reform of society.

⁸The influence of Emerson on Nietzsche has often been mentioned, but has yet to be developed in full detail. Nietzsche entitled one of his most famous books, *The Gay Science*, after an Emersonian phrase in "Poetry and Imagination," and once wrote of Emerson: "Emerson with his essays has been a good friend and cheered me even in black periods: he contains so much *skepsis*, so many "possibilities" that even virtue achieves esprit in his writings. A unique case!" (*Basic* 795). For a study of their relationship, see George J. Stark, *Nietzsche and Emerson: An Elective Affinity*.

Chapter Two

The Sublime Book of Nature

Thus there are two books from whence I collect my Divinity; besides that written one of God, another of this servant Nature, that universall and publick Manuscript, that lies expans'd unto the eyes of all.

Sir Thomas Browne
Religio Medici

In a certain sense, the proto-model of fundamental physics has no laws. Given an infinite void in which atomic clouds move about, a space in which sets and groups move, as soon as a phenomenon appears or a body is formed a law can be stated. The laws of nature come from conjugation; there is no nature but that of compounds. In the same way, there are the laws of putting together letter-atoms to produce a text. The alphabetical proto-cloud is without law and the letters are scattered at random, always there as a set in space, as language; but as soon as a text or speech appears, the laws of good formulation, combination, and conjugation also appear.

Michel Serres
Hermes: Literature, Science, Philosophy

I. Science and the Book of Nature

The paradigm of knowledge that emerged during the nineteenth century showed Emerson that the book of nature was charged. It became the basis for his sublime science. The maxim that inspired Emerson's poetics and rhetoric--"In good writing words are one with things"--reads the ancient idea that nature is a book with the new lights of science. Lee Rust Brown suggests that Emerson's background in the hermeneutic traditions of the New England Puritans, who viewed the natural world as "images or shadows of divine things," had prepared him to view the Jardin des Plantes as a text, a system of hieroglyphs, whose

meaning would be uncovered by scientific classification (62). In an early journal entry, Emerson succinctly relates textuality and nature, an idea that would occupy him throughout his life and become the basis for his poetics: "Nature is a language & every new fact that we learn is a new word; but rightly seen, taken all together it is not merely a language, but the language put together into a most significant and universal book" (*JMN* 4:95).¹ Between 1832 and 1836, the period during which he read most heavily in science, Emerson learned that the book of nature revealed by scientists was not one in which every word/thing had one simple meaning, but one in which each word/thing was a tension of forces. Emerson's reading about the electrochemistry of Humphry Davy and the electromagnetism of Michael Faraday, complemented by his interest in the organicism of J.W. Goethe and G. Cuvier, revealed a book of nature in which each word/thing, or "every sensuous fact" has a "double," "quadruple," "centuple," or "much more manifold meaning" (*CW* 3:3-4). As Emerson writes in one of his early lectures, he learned the art of composition from this book of nature (*EL* 1:317). Connecting Samuel Taylor Coleridge's theory of the polysemous literary symbol with his reading in science, Emerson writes in "The Poet" that good speech should "flow with the flowing" of this multisemantic nature. Whereas the mystic, "nails a symbol to one sense, which was a true sense for a moment, but soon becomes old and false," the poet realizes "symbols are fluxional," his "language vehicular and transitive," capable of expressing the "more manifold" meanings of nature (*CW* 3:20).

The old notion of the universe as text modified by nineteenth-century science presents nature not as a corrupt, insubstantial shadow of the eternal realm

of purity and light, but an emanation and pattern of energy. Through science, Emerson sees the realm of forms and spirit pulled down from the heavens and breathed through the earth. Likewise, because the particular things of nature constantly have new energy surging through them, they cannot be reduced to mere signs of an abstract world of form. For Emerson, things and words play "innumerable parts, as each particle of matter circulates in turn through every system" (CW 4:68). The words of nature's text as conceived by Emerson do not simply point to their meaning as a sign points to a signified; rather, words *are* their meaning. Emerson's words bear a strong similarity to Goethe's symbol, a particular thing or event that represents a more general thing or event, "not as a dream or a shadow, but as a living momentary revelation of the Inscrutable" (qtd. in Baehum 10).

In what follows I shall contextualize and elucidate Emerson's interweaving of science and poetics and rhetoric by reviewing how the book of nature evolved in four stages from Plato to the nineteenth century, locating an *episteme* and poetics in each stage. I review the first three stages to elucidate the significance of Emerson's use of electromagnetic information, which pulled him away from eighteenth-century natural history and nineteenth-century organism and toward the quantum universe of the twentieth century. I first show how from Plato until the European scientific revolution, the book of nature was a visible cipher for the invisible realm of God, theorized by allegory and/or typology. Then, I demonstrate how in the seventeenth century, the book of nature was viewed as a mathematical treatise, based on a poetics of number, whose things were numerical

signs that explained the functioning of the cosmos. I proceed to illustrate how in the nineteenth century two overlapping trends emerged in science and philosophy, one earlier than the other. In the late eighteenth and early nineteenth century, Goethe and the *Naturphilosophen* theorized that matter is an evolving pattern of organic energy. The book of nature related to this worldview was composed not of allegorical or typological figures, but of symbols, things/words that contain the immanent meanings they symbolize. I then go on to show how in the early and middle nineteenth century, the science of electromagnetism, led by Faraday, verified the intuitions of *Naturphilosophie* by proving that matter was animated by polarized electrical energy. Electromagnetism inspired what I call Emerson's electromagnetic poetics, which does not diverge in kind from the poetics of symbol, but in degree, as it renders language more charged, dynamic, sublime.

It should here be noted that any one of these four stages can be located in Emerson's work. Some have read him as Platonist/Christian; others, as a Newtonian; most, as a product of Goethe and Coleridge. Emerson, like his disciple Whitman, contained multitudes. Yet, no one has fully explored the fourth, electromagnetic trend in Emerson's work, which exists concurrently with the other three trends.

Two other caveats are in order. First, these four stages are necessarily reductive. Obviously, not all phenomena--historical, philosophical, literary--fit neatly within the four stages I delineate. The stages are paradigms. As such, they describe general trends in the history of Western thought, without trying to detail all particulars. Secondly, in reading allegory and typology as products of a poetics

of sign, as opposed to Emerson's poetics of symbol, I am again simplifying. Allegory and typology are often as polysemantic and dynamic as symbol, as the work of Edwin Honig and Angus Fletcher have shown. I offer the distinction between sign and symbol as a helpful scheme by which to make clear a delineation Emerson himself made between the univocal language of the mystic and the polysemous language of the poet. Emerson's poetics and rhetoric were informed, as has been noted, by the latter.

II. The Allegorical Book of Nature

1. Platonic Allegory

When in the *Timaeus* Plato wrote that time is "a moving image of eternity" (37d), he provided a basis for the theology of St. Paul, which in turn offered the foundation for Puritan typology. For Plato, the transient, visible world is a copy, albeit an inferior one, of the eternal, invisible world of perfect forms. The first Christian apologist Paul finds this relationship between matter and spirit compatible with his reading of Jesus's teachings. In *Romans* 1:20, Paul writes of God's relationship to the visible world: "For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made."

Louis Martz suggests that Augustine of Hippo's modulations of Plato and Paul inaugurated a belief dominating medieval thought, the belief that the two guides by which fallen, corrupt, ignorant man can attain knowledge of the perfect, wise God are the book of scripture and the book of nature.² Martz demonstrates

that the book of scripture is granted primacy in the Middle Ages as the light by which to read the book of nature (17). With the help of God's revelation in the Bible, humans might decipher the signs of nature. St. Bonaventure, a follower of Augustine in the thirteenth century, depicts the medieval view of the book of nature:

We can determine that all creatures in the sensible world lead the mind of the one contemplating and attaining wisdom to the eternal God; for they are shadows, echoes, and pictures, the traces, simulacra, and reflections of that First Principle, the most powerful, wisest, and best; of that light and plenitude; of that art productive, exemplifying, and ordering, given to us for looking upon God. They are signs divinely bestowed which, I say, are exemplars or rather exemplifications set before our yet untrained minds, limited to sensible things, so that through the sensibles which they see they may be carried forward to the intelligibles which they do not see, as if by signs to the signified. (qtd. in Martz 20)

In Bonaventure, these "signs" that signify God's wisdom make up "a book with writing front and back." Indeed in every creature there is a "refulgence of the divine exemplar, mixed with darkness" (qtd. in Jeffrey 14).

It is important to note that for Augustine, Bonaventure, and Thomas Aquinas, the signs of the Bible, as well as of the visible universe, necessarily refer to a definite set of meanings. Though Augustine is sensitive to the ambiguities of the Bible, he is careful to point out that there is one correct interpretation for each passage (*On Christian* 3:14). In his *Summa Theologica*, Aquinas states that both

visible things and words in the scripture are both signs of spiritual truth and their meaning is intended and guaranteed by God (1.1.9-10). Indeed, in the *Order of Things*, Michel Foucault characterizes representation in the medieval period and Renaissance as a system of signatures in which each thing is a sign with a necessary meaning. Each thing "resembled" and signified something else; man resembled God or a plant resembled man. Everything was a "sign" or "signature" in a world "covered with blazons, with characters, with ciphers and obscure words--with 'hieroglyphs And the space inhabited by immediate resemblances becomes like a vast open book" (26-7). In an effort to pin a definite and determinate meaning to each thing/word in this vast book of nature, scholars in the wake of an Augustinian revival in the twelfth century constructed, as Jeffrey writes, "encyclopedias and dictionaries of symbols, in which the world of objects is systematically referred to as an imagination of higher things one may find a spiritual meaning for anything from a nightingale to a cardinal number" (6).³

2. Puritan Typology

Puritan typology is a modification of this medieval tradition of reading scripture and nature as an allegories with definite meaning. As Thomas Davis illustrates, Puritan typology grew out of but opposed the allegorical tradition of the Middle Ages (11-45, *passim*). Though typology was initially a simplification of the fourfold method of Biblical exegesis, it soon was, like allegorical interpretation, applied to the book of nature. Like allegorical hermeneutics, typology was based on the distinction between the literal and figurative meanings

of scripture. Davis shows that the two schools of interpretation--the allegorical and typological--that grew out of a belief in a distinction between the literal and figurative meanings of scripture were different not in kind but in degree. The allegorical school inaugurated by Philo and developed by Augustine and Aquinas emphasized the fourfold meaning of scripture; this emphasis on multiple levels of meaning often degraded the historicity of the literal level, so the typologists thought, and led to a proliferation of allegorical interpretation based on the subjective fancies of the interpreters. The typological school began by St. Basil, Cyril, Eusebius and others insisted on the historicity of the Old Testament events and wished to simplify interpretation by focusing only on the typological meaning, not the tropological and analogical, which to them lead to fanciful, untrue interpretation (Davis 25-26).⁴ Strictly speaking, typology was developed by Paul and the early Church Fathers, including Origen and Augustine, as a way of reconciling the events and prophecies of the Old Testament with the Christian revelation of the New Testament. A version of it appears in several places in the Epistles (I *Corinthians* 10:11, *Galatians* 4: 22-24, among others) in which Paul expresses the doctrine that would be solidified by Augustine some four hundred years later: "In the Old Testament the New Testament is concealed; in the New Testament the Old Testament is revealed."⁵

In constructing Protestant theology, both Martin Luther and John Calvin tried to simplify fourfold typology, which was practiced primarily by Roman Catholics. They condemned its excesses in interpretation. From the beginning of

Protestantism until its evolution into Puritanism, typology was the reigning hermeneutic, with the Old Testament types corresponding to New Testament antitypes in a systematic, necessary way. Likewise, just as the New Testament corresponded to prior, Old Testament events, it also referred to future events in time as the divine plan of God unfolded (Davis 12-13). As Joseph Rosenmeier asserts, seventeenth-century Puritan typology emphasized the future fulfillment of the New Testament antitypes at least as much as it focused on the relationship between the New and Old Testaments (84-105, *passim*). In applying typology to historical events, the Puritans read present historical events as types of Biblical events.⁶

3. Allegory and Typology

Typology is based on the Platonic distinction between matter and spirit, visible and invisible, temporal and eternal. American Puritan histories, sermons, and diaries abound with efforts to read real events as if they were signs. Each event is a sign of God's providence.⁷ In the eighteenth century, Jonathan Edwards summed up the Puritan hermeneutic in his posthumously published *Images or Shadows of Divine Things*: "The book of Scripture is the interpreter of the book of nature in two ways, viz., by declaring to us those spiritual mysteries that are indeed signified and typified in the constitution of the natural world; and secondly, in actually making application of the signs and types in the book of nature as representations of those spiritual mysteries in many instances" (109). Ursula

Brumm has correctly shown that Emerson echoed Edwards' emphasis on nature as a book; however, she notes that they differed on two counts. One, while Edwards "makes inferences about nature on the basis of the Bible, . . . Emerson . . . allocates prime importance to the book of nature" (106). Two, Emerson nowhere expressly applies "type" to nature, but treats it as a synonym for "symbol," "emblem," and "sign." The other difference between Emerson and Edwards, which Brumm does not note, is that Edwards fixes one meaning to each word/thing, while for Emerson word/things are polysemous. For example, Edwards attaches the "shadow" of "death temporal" to "eternal death"; "[r]oses" growing "upon briars" to the fact that "all temporal sweets are mixt with bitter"; the sun is God's bounty and diffusion (43, 45). Indeed, Perry Miller observes that Edwards extended typology to nature "to rebuke tropes" ("Introduction" 24). Tropes, like the allegories of the Scholastics, proliferated instead of circumscribing meaning. They were the tools of the unregenerate, who saw clearly that each of God's works was an image for one divine meaning (24-31, *passim*). Emerson defined this urge to limit meaning as mystical, not poetical. The mystic, for example, reduces the dawn to one meaning; the poet views it as a vehicle for several significations (*CW* 3:20). While Edwards's Newtonian heritage, as Miller notes, contributed to his "scientific" poetics--his theory of typology (34-35), Emerson's background in organicism and electromagnetism influenced the non-Newtonian, "poetic" science of his theory of symbol.⁸

Though the allegorical and typological schools differ in range of interpretive freedom, they share in the assumption that the world is a text whose

words refer to a spiritual meaning. Both presuppose that the words/ things/ events of this book can be reduced to one determinate meaning or set of meanings. The etymologies of "allegory" and "type" characterize the similarity between these exegetical methods. Angus Fletcher reminds us that "allegory" derives from the Greek *allos*, other, and *agoreuein*, to speak openly (*Allegory 2*). The term, Fletcher notes, is often associated with "inversion." Edward Phillips writes in 1678 that allegory is "Inversion or changing: In Rhetorik it is a mysterious saying, wherein there is couched something that is different from the literal sense" (qtd. in *Allegory 2*). Allegory presupposes a separation between a word and its other meaning, between the literal and the figural, in which literal words are ciphers or enigmas that are essentially meaningless without their allegorical definitions. Romantic criticism of allegory in favor of symbol emphasized the "otherness," the separation between the sign and its "other" meaning, in allegory. For Goethe, allegory occurs when a particular is chosen as an example for a general, as opposed to symbol, which occurs when the general is in the particular (qtd. in Baeumar 10). Coleridge calls allegory a "translation of abstract notions into picture language, which is itself an abstraction from objects of the sense," whereas a symbol is "translucence" or the general in the particular, the unity of the two (*Lay 30*).

Type derives from the Greek *tupos*, which encompasses a wide range of related meanings. In Liddell and Scott *tupos* is "the effect of a blow" or "the print or impress of a seal"; it is a "figure, image" or statue"; a "form or character, the type or model of a thing." In her analysis of the word, Brumm points out that

Plato uses the word to refer to his ideas, the general models or forms of particulars. She also reminds us that Paul uses it in I *Corinthians* 10 to refer to an example, and uses synonyms of the word, like figure, in other places to refer to events that exemplify and prefigure Jesus (21-22). Like allegory, type etymologically suggests a sign that serves as a particular example for a general principle or an image that represents something else. "Seal," one of the definitions of type, shows that a type is a sign, as sign and seal both derive from the Latin *signum*. Indeed, Augustine uses sign and allegory synonymously, while Edwards treats sign and type as synonyms.

"Sign" suggests the overlap of allegory and typology. Etymologically, a sign is a visible impression or stamp that points to a definite meaning. Like allegory and typology, it is static and expresses one meaning. While both sign and symbol are visible evidences for invisible meanings, symbol is dynamic and flexible, deriving as it does from *symbolleîn*, to throw together. While the firmly stamped sign *points* to its signified, symbol *embodies* its symbolized. The sign is fixed; the symbol metamorphoses. The sign is secure; the symbol, a site of risk. For Emerson, symbol is the medium for the naturalist, who knows that meanings, like nature, evolve. These theories of symbol designate an intermediary site in the evolution from the allegorical poetics of sign to the electromagnetic poetics of Emerson.

The allegorical and typological books of nature are both based on the Platonic distinction between visible sign and its invisible meaning. Both presuppose a one to one correspondence between sign and signified. Both schools

assume that the book of nature is constructed by a *poetics of sign*, by which things are impressed or stamped by signals or signatures that bear a temporally discrete univocal meaning.

III. The Mathematical Book of Nature

1. The Scientific Revolution

This trend of viewing nature as a book of univocal signs continued into the seventeenth century. But at the beginning of that century, Francis Bacon questioned the notion of the allegorists and typologists that the book of scripture was the light by which the book of nature could be read. As William G. Madsen suggests, Bacon's attempt to inaugurate the autonomy of scientific investigation required that he reverse the emphases traditionally placed on each book. In the *Advancement of Learning*, Bacon writes that

God has laid before us two books or volumes to study, if we will be secured from error; first, the Scriptures, revealing the Will of God; and then the creatures expressing His power; whereof the latter is a key unto the former: not only opening our understanding to conceive the true sense of the Scriptures, by the general notions of reason and rules of speech; but chiefly opening our belief, in drawing us into a due meditation of the omnipotency of God, which is chiefly signed and engraven upon his works. (1.6.16; qtd in Madsen 141)

While this passage bears vestiges of Platonism, it also evidences a new spirit that would soon lead to a scientific method designed to read the signs of nature without

the aid of the words of scripture.⁹ As Emerson observed in an 1835 lecture on Bacon, whose work he had been reading since 1820, "Newton, Davy, and Laplace have put in execution the plan of Bacon. The whole history of Science since the time of Bacon is a commentary and explanation of his views" (*EL* 1: 333). He praises Bacon's method of induction because it does not impose a constructed unity on nature from without, but discovers inherent laws by "accumulating observations and experiments and . . . deduc[ing] a rule from many observations" (*EL* 1:330). For Emerson, Bacon teaches that we should not alter nature to fit our own desires, but "should like children learn of nature and not dictate to her" (*EL* 1:330-1). We should command nature, Bacon writes, "by obeying her" (*EL* 1:331).

Galileo, whose biography Emerson was reading in the early thirties (*EL* 1:18), likewise tried to strip the study of nature from the dictates of scripture. His study of nature was based on mathematics, not the Bible.

Philosophy is written in this grand book , the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it: without these, one wanders about in a dark labyrinth. (qtd in Briggs 50)

As Marjorie Hope Nicolson, Basil Willey, and Douglas Bush have shown, early seventeenth-century science did not make a complete break with the medieval idea

of correspondences between earthly signs and heavenly signifieds. Not only does Galileo here cast his project in terms of Plato's ideas on geometry, but Kepler was a highly religious mystic who believed in number symbolism, and Newton, who was influenced by the religious mystic Jacob Boehme, was concerned with interpretations of Biblical apocalypse (Nicolson, *Breaking* 147-155). The difference between the typological and allegorical books of nature and the book of nature of the scientific revolution lay not in the author of the book--God--but in the language in which the book was written and in the placing of more emphasis on the book--nature--than on the author--God. The figurative language and cowering before God of the Middle Ages gave way to a mathematical language and celebration of man in the seventeenth century.

2. Language, Mathematics, Machine

Bacon, Galileo, and others sought a purely objective method for finding and expressing scientific truths. Foucault shows that one aspect of the shift from the Renaissance to the classical *episteme* of the Enlightenment was a move from the idea of nature's book as a language of resemblances to the idea that the universe was expressed in signs that represent "identity, difference, measurement, and order" (52). Foucault reminds us that one of Bacon's first moves in dismantling medieval science was to attack the theory of correspondence between the physical world and the spiritual world (52). His method required induction, proceeding from particulars to general axioms. The ideal expression of these axioms was in a language that did not so much signify as function, like parts in a machine

(Foucault 79). Indeed, Emerson's critique of Bacon is that his language lacks literary merit, falling into "mere lists of facts material and spiritual." His method seemed dry and fragmentary to Emerson, lacking the vitality of the works of Milton and Shakespeare (*EL* 1:334-5).

Emerson's criticism is apt. At the beginning of the century, Bacon called for a language that would "set everything forth, as far as may be, plainly and perspicuously (for nakedness of mind is still, as nakedness of the body once was, the companion of innocence and simplicity)" (qtd. in Jones, "Science and English" 55). Bacon's advice for clear, precise, scientific prose inspired England's Royal Society in the second half of the seventeenth century to reduce prose to "mathematicall plainness" (Jones, "Science and Language" 100). Rebelling against the figurative language or linguistic ambiguity of any sort, practitioners of the New Science wished to strip language down to a system of signs, each with meaning as clear as a mathematical symbol. Indeed, the most extreme case of this movement towards a universal language was found in John Wilkins's *Essay towards a Real Character and a Philosophical Language*, a treatise sponsored by the Royal Society. Wilkins's laments "the ambiguity of words by reason of Metaphor and Phraseology" (qtd. in Jones, "Science and Language" 103). He calls for, with his other Society members, a univocal language. As Robert Adolph observes, the New Scientists "yearned for a style devoid of literary qualities all together, including aphorisms, antithesis, paradoxes, neologisms, and metaphors . . ." (20).

During the late seventeenth century and into eighteenth, European thinkers tended to view the book of nature as unadorned--either geometrical or

stenographical--and mechanistic--as a clock, a machine. During these centuries, language was generally conceived as an unobtrusive and efficient tool for representing the classifications and formulas of scientific truth, part of the "general grammar" meant to arrange thought in a linear order (Foucault 82-83). There was a dream of a perfectly analytical language that would express the "general grammar" of a mathematically ordered, mechanistic book of nature. Kepler succinctly expresses this view:

Why waste words? Geometry existed before Creation, is coeternal with the mind of God, is God himself (what exists in God that is not God himself?): geometry provided God with a model for the Creation and was implanted into man, together with God's own likeness My aim is to show that the heavenly machine is not a kind of divine, live being, but a kind of clockwork . . . insofar as nearly all the manifold motions are caused by a most simple, magnetic and material force, just as all motions of the clock are caused by a simple weight. And I also show how these physical causes are to be given numerical and geometrical expression. (qtd. in Briggs 43)

While Galileo and Kepler were celebrating the discovery of a geometrical book of nature as well as the possibility of expressing its facts in the unadorned language of geometry, the early chemist Robert Boyle was proposing in *The Sceptical Chymist* (1661) that matter was comprised of corpuscles--impenetrable particles--that were parts of a "self-moving engine," a "rare clock." For Boyle, the corpuscular book of nature was "a well-contrived romance," "written in the

stenography of God's omnipotent hand" (qtd. in Brock 66). For Newton, as for his precursors Galileo, Kepler, and Boyle, micro- and macroprocesses could be accounted for mathematically and mechanistically. Newton's theory of matter, expounded in 1706 in an appendix to his *Opticks*, is based on Boyle's mechanistic one, though made to fit his theory of gravity. For him, as for Boyle, matter is comprised of corpuscular atoms. Just as larger bodies, like planets, are acted on by the attractive force of gravity, so these microbodies are held together by attractive and repelling powers. These atoms, like macrobodies, are driven by action at a distance, albeit a short distance (Toulmin and Goodfield 188-92). Planets and atoms are both parts of a vast machine fashioned on a mathematical blueprint.

While the allegorical and typological books of nature were read qualitatively, the scientific book of nature was interpreted quantitatively. As Foucault demonstrates, even the specimens of the natural histories of Linneaus were classified based on such quantifiable categories as form, number, distribution, and size of different features and organs (132-137). For Foucault, the *episteme* of seventeenth and eighteenth-century Europe was centered on the notion that the things of nature could be converted to number; in turn, number became the ideal for language. The book of nature in these centuries most closely resembled a mathematical treatise.

3. Convergences between the Allegorical and Mathematical

It is important to remember that what Foucault calls the Renaissance

episteme of the Middle Ages and the sixteenth century and the classical *episteme* of the seventeenth and eighteenth centuries often overlapped. In the 1630's, Thomas Browne still maintains in his *Religio Medici* that he "collects" his divinity from both the book of scripture and the book of "his servant Nature" (78), but he also works to dispel with science "vulgar errors" in his *Pseudodoxia Epidemica* in 1646 and attempts to quantify the universe into a series of quincunxes in the *Garden of Cyrus* in 1658. Indeed, both the Renaissance and classical books overlap in their preoccupation with the universe as a system of signs, whose signifieds, be they the invisible heavens or the quantifications of scientific law, yield the meaning of life. The basic difference between the earlier and later books is that the former is a book written in figurative language whose meaning lies in the realm of the invisible while the latter is a treatise written in mathematical language that signifies invisible laws. However, they are both predicated on the idea that the universe is constructed by a *poetics of sign*, in which things and events can be reduced to a univocal meaning or hierarchical set of determinate meanings. Just as the medieval bestiary attaches a spiritual meaning to each animal, and as the Puritan history reads events as signs of God's providential plan, so the Enlightenment scientist interprets things and occurrences as signs of mathematical laws. A she-wolf is a sign of incontinence; a voyage to America is a sign of the advent of the New Jerusalem; a falling apple is a sign of the equation of the law of gravity. Both the religious and the scientific books are comprised of particular signs that point to and stand for generalized signifieds.

Madsen offers a chart that plots the movement from the religious emphasis

of the Middle Ages to the more scientific emphasis of the seventeenth century; he is quick to note that the two movements converge in several cases, especially in the case of Galileo (to which we can add Kepler and Newton). However "artificial and oversimplified," these charts not only suggest differences between the books of nature; they also suggest their similarities. Both books presuppose that the signs of nature correspond to a coherent, hierarchical set of meanings. The religious book is "metaphoric, poetic, concrete"; the scientific "literal, scientific, abstract." The religious book expresses nature as "a repository of symbols whose meaning is revealed only in the Bible," while the scientific book articulates nature "as an example of God's attributes of order, harmony, and so on." The religious book is like "a metaphysical poem, composed of witty conceits"; the scientific, like "a book of mathematical symbols" (128-129). Both books are based on what I shall call here a poetics of sign, in which "something visible or evident . . . gives grounds for believing in the existence of something else." The poetics of sign tends to degrade the visible, external sign at the expense of the signified. Clearly, for religious minds, the visible signs of nature were corrupt copies of the invisible signifieds of heaven, and mere vehicles by which one might understand the divine. Similarly, as A.N. Whitehead shows, the mathematical thinking of the seventeenth and eighteenth centuries cared little for particular, visible things, but viewed all things as signs of abstract mathematical truths. Five fishes, children, apples, or days could all be articulated by the abstract relation of "five"; thus, the particular sign was merely a cipher that pointed to an abstract relation (25-27). Indeed, Whitehead characterizes the mathematical, mechanistic book of nature as an

example of the "Fallacy of Misplaced Concreteness," in which "concrete facts" are expressed "under the guise of very abstract logical constructions" (52). This error, which "mistakes the abstract for the concrete," reduced particular things--forgetting their distinctive smell, taste, touch, color, etc--to bodies of mass resting in simple location until acted on by an external force. The relationships between bodies and forces and between bodies themselves could be expressed by numbers (50-56).

IV. The Symbolic Book of Nature

1. Cuvier and Organic Form

According to Whitehead, the nineteenth century was, in contrast to the eighteenth, not mathematical. Pure mathematics waned, as did the fallacy of misplaced concreteness, while the concept of organism gained precedence in the four great novel ideas of that century: electromagnetism, atomicity, conversion of energy, and evolution. With the advent of these four ideas, the book of nature changed. It emerged from the poetics of sign, in which the visible stands for the invisible, to a *poetics of symbol*, in which the visible is the invisible. Emerson's book of nature reflects this change in paradigm.

Foucault agrees with Whitehead in characterizing the change as a move from seeing things as static entities acted on by external forces to viewing things as evolving patterns of intrinsic energy.

What occurred at the end of the eighteenth century was a change in the foundations of knowledge The world is now seen to be made up, not

of isolated elements related by identity and difference, but of organic structures, of internal relations between elements whose totality performs a function. . . . This notion of function makes time of central concern. . . . History performs a fundamental role in modern thought similar to Order in Classical thought. . . . By History is meant that fundamental arrangement of knowledge, involving notions of time, development, "becoming," that is common to all the empirical sciences that arose in the closing years of the eighteenth century. (210-211)

Emerson's book of nature clearly reflects this change. His understanding of the electromagnetism of Faraday and the organicism of Goethe led him to conceive a book of nature whose words/things are not mere ciphers that point to something else, but dynamic events in which meaning is immanent. As Lee Rust Brown shows, the cabinets housing the specimens in Jardin des Plantes struck Emerson like a book whose emblems were "not only vehicles for communicating nature's meanings: in a surprisingly literal sense, they made up the form and content of meaning itself" (62). The method of classification for a majority of the animal specimens was that of G. Cuvier, who taught at the Jardin from 1795 until his death and who was the mainly responsible, along with A.L. Jussieu, for the menagerie and zoological cabinets Emerson saw.¹⁰

Cuvier was one of the first scientists to articulate organic form. Ernest Mayr shows that while Linneaus in the eighteenth century classified specimens based on external appearance, Cuvier arranged specimens following the functioning of their internal organs. Cuvier believed that the internal anatomy of

animals best illustrated relationships of class, genus, species, etc. (Mayr 183). In his *Lecons d'anatomie comparee* (1800), he postulated that:

It is in this mutual dependence of the functions and the aid which they reciprocally lend one another that are founded the laws which determine the relations of their organs and which possess a necessity equal to that of metaphysical or mathematical laws, since it is evident that the seemly harmony between organs which interact is a necessary condition of existence of the creature to which they belong and that if one of these functions were modified in a manner incompatible with the modifications of the others, the creature could no longer continue to exist.(qtd. in Mayr 183-4).

Cuvier is suggesting a new way by which to order the universe. His ordering is based on the principle of function, on the question of how the internal structure of an organism changes over time. The outward form of the organism is dependent on its internal content, and the internal makeup is likewise contingent upon outward form. For this reason, Brown supposes that Emerson learned in the Jardin that "natural history assumed that the meanings indicated by visible nature were more like practices than static essences" (62).

By focusing on the vital organs hidden beneath visible form, Cuvier verbalized a principle of life, the invisible, dynamic principle that underlies and generates the functioning of each organism. In seventeenth and eighteenth-century science, the "signs and characters" of a specimen, its external organs, were thought to correspond to the overall orders of the physical world, like identity and

difference, essentially mathematical relations. Cuvier tore this correspondence apart in asserting that, as Foucault paraphrases, "living beings, because they are alive, can no longer form a tissue of progressive or graduated differences; they must group themselves around the nuclei of coherence which are distinct from one another, and which are like so many different plans for the maintenance of life" (272-3). The outward signs of organisms no longer correspond to external, abstract orders, but manifest that particular organism's filtering of life through its particular form. Whereas classical science examined "being" as a clearly analyzable representation of cosmic order, science after Cuvier studies "life," which "withdraws into the enigma of a force inaccessible in its essence, apprehendable only in the efforts it makes here and there to manifest and maintain itself" (273). Life is not an abstract principle, but a force that is both "exterior" to beings and "manifests" itself within them. The organism is a pattern of organic structure, maintaining "uninterrupted relations with exterior elements that it utilizes (by breathing and eating) in order to maintain or develop its own structure" (273). Around and through the living being there is, as Cuvier writes in his *leçon*, "a continual circulation from the outside to the inside, and from the inside to the outside, constantly maintained and yet fixed within certain limits. Thus, living bodies should be considered as kinds of furnaces into which dead substances are successively introduced in order to be combined together in various ways" (qtd. in Foucault 274). Whitehead echoes Foucault's reading of Cuvier when he formulates organicism as "an underlying activity--a substantial activity--expressing itself in individual embodiments, and evolving in achievements of organisms"

(101) and claims that the organism is a pattern of fusion between extrinsic and intrinsic elements or forces (98).

It is important to note that while Cuvier articulated a version of organic form for individual organisms, he was opposed to the idea that species evolve from lower to higher forms as they function over time. Opposed to Lamarck, Cuvier maintained that species were fixed, unable to transmute into different or higher forms. He also argued against continuity in nature, a natural scale ranging from low to high, a great chain of being. Believing in what is called "catastrophism," he maintained that extinctions and variations could be attributed to several floods or other natural calamities throughout history that wiped out certain species, making room for new ones created by divine will. Indeed, for all his novelty in classification, Cuvier held that species and nature are fixed, not fluid, and that vast changes took place not by way of an evolving, immanent spirit, but because of large-scale disruptions (Mayr 363-68). It is perhaps curious that Cuvier exerted such influence on Emerson, who, like Lamarck and Goethe, believed that simple organic forms were evolving into more complex ones. Emerson was clearly part of what A.O. Lovejoy has designated as the "Temporalizing of the Great Chain of Being," which occurred in the late eighteenth and early nineteenth centuries when scientists and philosophers forecasted evolution by theorizing that the plan of the universe did not inhere in static beings, but unfolded over time in the metamorphoses of specimens (242-287, *passim*). However, for Emerson, Cuvier and Goethe were curiously versions of one another, as he focused primarily on their conceptions of organic form, which were grounded on the idea that an

internal energy shaped outward appearances.

The universe Emerson saw displayed in the cabinets managed by Cuvier in the Jardin was one in which organisms are visible manifestations of invisible forces that shape them and are shaped by them. He notes this interaction between the visible symbols and invisible meanings in "The Uses of Natural History" when he calls the botanical cabinet a language "a grammar of botany," a "natural alphabet" (*EL* 1:8). Later in his first lecture on science, he writes that "Nature is a language and every new fact we learn a new word; but it is not a language taken to pieces and dead in the dictionary, but the language put together into a most significant and universal sense" (*EL* 1:26). He notes that the nature that Cuvier saw is not "a dull unprofitable world," but "a book" of "the history of the globe, the changes that were effected by fire, by water, by pressure, by friction in ages long prior to the existence of man upon the planet" (*EL* 1:18).

Emerson, who read Sarah Bowdich Lee's biography of Cuvier in 1830 and subsequently began to read the scientist's own work in 1831, sensed the meaning of Cuvier's discoveries in the same way that Foucault does later. For Emerson, Cuvier viewed organic existence as a dynamic process. Emerson recapitulates Cuvier's ideas on form as the function of an organism over time when he writes "every form is a history of the thing" (*EL* 1:17). For Emerson, the examination of the forms of organisms was a study of the unfolding of energy. In "The Naturalist" Emerson included Cuvier in a list of scientists who "approach the elemental law, the *causa causans*, the supernatural force" (*EL* 1:80). This force behind all life is, as Cuvier claimed, mysterious, enigmatic, bewildering. Emerson

repeats this at the beginning of the often-quoted passage about his experience in the Jardin at the end of which he claims he will be a naturalist:

The eye is satisfied with seeing and strange thoughts are stirred as you see more amazing objects than were known to exist You are impressed with the inexhaustible gigantic riches of nature. The limits of the possible are enlarged, and the real is stranger than the imaginary. The universe is a more amazing puzzle than ever, as you look along this bewildering series of animated forms . . . and the upheaving principle of life everywhere incipient, in the rock aping organized form. (*JMN* 4:199-200; *EL* 1:9-10)

2. Goethe and Organic Form

Each organism is a form of the "upheaving principle of life," a pattern of energy. Emerson also found this idea in the *Naturphilosophie* of Goethe, which explained all phenomena as a manifestations of an underlying force (Doran 146-47). Emerson catalogues Goethe with Cuvier in a list of those who "joined Nature to Revelation" (*EL* 1:132), who found ways to interweave particulars and universal force. In a passage inspired by Goethe's *Metamorphosis of Plants*, which Emerson read in the early 1830's,¹¹ Emerson writes of a view that "much impressed Goethe," "The whole force of the Creation is concentrated upon every point. What agencies of electricity, gravity, light, affinity combine to make every plant what it is" (*EL* 1:72). For Emerson, Goethe and Cuvier correspond to one another. Both not only held that organisms are patterns of immanent life, but that organisms

evolved as the energy of life metamorphosed their basic, internal forms. Robert Richardson notes that Emerson's reading of Goethe's *Metamorphosis* inspired him to write "We have no theory of animated nature. When we have it, it will be itself the true Classification" (*JMN* 4: 288-9; qtd. in Richardson 171). This passage expresses Emerson's desire "to understand not only matter but the directing and organizing of matter" (Richardson 101).

Goethe's conjectures on the *Urplanze*, the primal botanical form, were certainly in the back of Emerson's mind as beheld the specimens of Cuvier in the Jardin des Plantes. During his trek through Italy on his way to Paris, Emerson read of Goethe's own Italian journey, in which the German poet gives an account of his own epiphany into nature in the public gardens at Palermo (Richardson 172). Goethe came to the conclusion that "[f]rom top to bottom a plant is all leaf" (*Italian* 299; *Scientific* 327n). This idea that the plant is a basic form constantly undergoing metamorphoses driven by internal energies fascinated Emerson. In his early lecture "The Humanity of Science," Emerson paraphrases Goethe's conjecture in his *Italian Journey*, writing of the *Urpflanze*: "[I]s not every part of a plant a transformed leaf? a petal is a leaf, a fruit is a leaf, a seed is a leaf, metamorphosed, and slow-paced experience has made good this prophetic vision, that is, it may be demonstrated that a flower is analogous in its structure to a branch covered with leaves,--is a branch of metamorphosed leaves" (*EL* 2:24). Later, Emerson again praises this idea, citing how Goethe extended it to human form. Just as "the eye of a leaf" is the unit of botany that is converted into multitudinous forms of leaves, so the "one vertebrae of the spine" is the unit of the

skeleton, the head being "only the uppermost vertebrae transformed" (CW 4:158).

Emerson, as noted above, wove this Goethean idea into his version of evolution, which is not Darwinian but Lamarckian. Emerson believed that the life force is always evolving into higher forms, that it "publishes itself in creatures, reaching from particles and spiculae through transformation to the highest symmetries, arriving at consummate results without a shock or leap" (W 3:179). Like Lamarck, who held that each organism had an inherent capacity or drive toward "increasing perfection" (Mayr 360), Emerson believed that organisms evolved into higher forms, as his epigraphic poem for the 1849 edition of *Nature* shows: "And, striving to be man, the worm/Mounts through all the spires of form."¹² The influence of evolution on Emerson, primarily through his reading of Charles Lyell and Robert Chambers, is very important in considering his moral philosophy. However, Emerson's evolution is beyond the scope of this study.

Goethe's idea that there is an archetypal form that has been modified into several variations by the forces of life fascinated Emerson and contributed to his firmly held belief that words are forms of life. Goethe writes in *On Morphology* that "all the more perfect organic natures, as which we consider fishes, amphibia, birds, mammals, and at their highest point Man himself, are all formed according to an *Urbild* [archetype], which varies only more or less in its basically constant parts, and which still daily develops and becomes modified by reproduction" (qtd. in Mayr 457). In the same work, Goethe considers the leaf as one of these primal structures metamorphosed by interaction with the surge of life (*Botanical* 94-95). For Goethe the nature philosopher plants and animals are organic in that they are

evolving interactions between the disruptive surge of life and their own intrinsic form, between centripetal and centrifugal forces:

The concept of metamorphosis is a highly estimable gift from above, but at the same time a highly dangerous one. It leads to formlessness, destroys knowledge, disintegrates it. It is like centrifugal force and would lose itself in the infinite if a counterweight were not provided. I am referring to the specification force, that tenacious capacity for persistence inherent in whatever has attained existence, a centripetal force that cannot be disturbed in its deepest nature by anything external. (*Botanical* 116)

The physical world is manifested in a tense and creative interaction of opposites. In plants, the vertical principle is the durable, stable, centripetal principle that maintains form; the spiral principle is the developmental, nourishing, centrifugal principle that entwines itself around the vertical principle, pushing toward excess (131-32). These two opposing forces, however, fuse into organic form: "Neither of these two systems can be imagined alone; they are ever and eternally one; and in complete equilibrium they produce the most perfect vegetation" (132). Plants manifest organic form like all other phenomena; they are fusions between intrinsic and extrinsic energy, centrifugal and centripetal forces, vertical and spiral tendencies, male and female qualities (144). In a piece called "The Influence of the New Philosophy," Goethe generalizes his observations of plants, treating all nature as an organic interaction between part and whole, opposition and unity: "Nature, although always observing an analytic procedure, developing from one vital mysterious whole, sometimes appeared to operate synthetically, since

elements that seemed to be completely foreign were juxtaposed and joined together" (230). Nature and human thought are like breathing, proceeding by both systolic and diastolic pulses, each organism a site of rhythmic interaction between the whole and the part (230). Goethe extends the organic analogy to art as well; nature and art are "directed outwardly from within" (230), are evolving patterns of energy. Neither, though, are ordered by systematic classifications of eighteenth-century thought: "Natural system--a contradiction in terms. Nature has no system; she has, she is life and its progress from an unknown center toward an unknowable goal" (116).

3. Emerson, Organic Form, Coleridge, and the Symbol

Emerson in "The Humanity of Science" rephrases Goethe and indirectly refers to Cuvier's theory of life when he writes that scientific discoveries have suggested that there may be a force that underlies all life: "all these [scientific discoveries] whether they are premature generalizations or not, indicate the central unity, the *common law that pervades nature from the deep centre to the unknown circumference*" (EL 2:29; italics mine). For all of their differences, Goethe and Cuvier provided models for three of the leading ideas of the ever-synthesizing Emerson. First, both show that life is an inscrutable force that does not act on matter from a distance, as the Newtonians held, but shapes it from within. Goethe reacted strongly to scientific tendencies inaugurated by Newton. Newton, he believed, ignored the richness of life in his focus on the relationship between bodies and external forces. As Stephen Toulmin and Janet Goodfield observe,

Goethe scorned the *Opticks* because it relied too heavily on dry experimentation and mathematics. Goethe believed the scientist should study life out in nature, not numbers in a laboratory. In nature, the scientist finds not static bodies acted on and interacting at a distance, but organisms inhabited by energy, the "germs and productive powers" in things, "the inmost force, which binds the world and guides its force" (237). Emerson expressed this idea about organisms in several guises throughout his career, often sounding like a Platonist in calling the force "spirit," other times echoing Cuvier and Goethe in designating it as "life," and, still other times equating it with electromagnetic force. In his first published paragraph, Emerson writes that nature's "floods of life stream around and through us" (CW 1:7). In the "Method of Nature" he celebrates this principle of life: "In all animal and vegetable forms, the physiologist concedes that no chemistry, no mechanics, can account for the facts, but a mysterious principle of life must be assumed, which not only inhabits the organ, but makes the organ" (CW 1:125). And just as "agencies of electricity, gravity, light, affinity, combine to make every plant what it is" (EL 1:72), so "Spirit alters, moulds, [and] makes" nature (CW 1:44).

Whatever may have been the exact source of Emerson's belief in a universal principle of life, the salient characteristic of each of his formulations is the idea that life does not act on matter only from the outside, as Newton held, but also from within. For Emerson, matter and organisms are evolving forms shaped by force from within, force that "inhabits" the organism, that streams "through" it. This idea fundamentally separates Emerson's book of nature from the religious and scientific books of nature, which assume that matter is a sign or example of

abstract principles. For Emerson, matter is the internal force that comprises it; for the theologian and for the Newtonian, matter points to an external force that generates it.

A second Emersonian idea that both Cuvier and Goethe express is that things are sites of a creative tension of opposites, be they part and whole, energy and form. Allen proposes that Emerson's articulation of polarity was grounded on his early reading in science, in which he discovered that "we seem to be approaching the elemental secrets of nature in finding the principle of Polarity in all the laws of matter, in light, heat, magnetism, and electricity" (*EL* 1:48; qtd. in "New Look" 66). Whether he was thinking of the tension between matter and spirit, action and equal and opposite reaction, or positive and negative charges, Emerson invoked the concept of polarity. In the "The American Scholar," Emerson writes of "That great principle of Undulation in nature, that shows itself in the inspiring and expiring of the breath; in desire and satiety; in the ebb and flow of the sea; in day and night; in heat and cold; and as yet more deeply ingrained in every atom and every fluid, is known under the name of polarity" (*CW* 1:61). Emerson extends his doctrine of polarity in the 1841 essay "Compensation" to include "centrifugal and centripetal gravity" and "electricity, galvanism, and chemical affinity" (*CW* 2:57). As observed below, he found scientific proof for the organic rhythms of Goethe in the positively and negatively charged atoms of Faraday. This basic duality in nature led Emerson to write in 1844 that "[N]ature is *one thing and the other thing*, in the same moment" (*CW* 3:139). If matter is an emanation of the force that underlies the universe, it is

also a site of tension, of paradox, between the antinomies of nature that span from the dance of atoms to the undulations of the ocean.

Goethe and Cuvier expressed a third idea that occupied Emerson throughout his life: the idea that the organic book of nature is a model for organic art. The organic book of nature that Emerson saw in Cuvier's cabinets at the Jardin des Plantes corresponded to the organic form that Goethe located in good art. As Allen notes, Emerson makes it clear in his first lecture on science that the language of nature provides a model for human knowledge ("New Look" 62). Emerson claims that it is a "wonderful fact," the "power of expression which belongs to external nature" (*EL* 1:24). Emerson sums up the influence of Goethe on his conception of nature as a book in the 1850 essay on the German poet. "Nature will be reported. All things are engaged in writing their history . . . The air is full of sounds; the sky, of tokens; the ground is all memoranda and signatures; and every object covered over with hints, which speak the intelligent" (*CW* 4:261). Nature's writing inspires man, who is "born to write," to record nature in a "new and finer form of the original, a record that is "alive, as that [nature] which is recorded is alive" (*CW* 4: 261).

Though Emerson may have learned that "everything is significant," that "an entire cabinet of shells would be an expression of the human mind" from both the Calvinism of his Aunt Mary Moody and the Swedenborgian thought of Sampson Reed and G. Oegger, Sherman Paul asserts that neither of these sources would have identified the symbol with the process of nature. As Paul writes, both the Calvinists and the Swedenborgians (both, for all their divergences, essentially

following the tradition of Edwards's *Image and Shadows*) "spiritualized things, made the outer inner; but they did not see through the symbol, that is, by its means penetrate the flux and affirm its law" (110). By dogmatically pinning the things of nature to one meaning, Swedenborg and the Calvinists failed to see that the things of nature are fluid and dynamic, thus incapable of expressing one and only one meaning (110-111). Both groups believed that nature was constructed on what I earlier designated a poetics of sign, which I equated with Coleridge's and Goethe's definitions of allegory. Lee Rust Brown is correct to point out that in the *Jardin*, "the significance of natural facts shone forth in the semiotic mode Samuel Taylor Coleridge had called 'symbol' as opposed to 'allegory'" (63).

Coleridge's theory of symbol is paramount for understanding Emerson's poetics. In *The American Renaissance*, Matthiessen writes that Emerson's belief that in good writing words are one with things came at a period, in the early thirties, when he was making frequent mentions of Coleridge in his journal. Coleridge himself had claimed "I would endeavor to destroy the old antithesis of Words and Things: elevating, as it were Words in Things and living things, too" (qtd. in Matthiessen 30). Journal entries from 1832-1836 show that Emerson had been reading Coleridge's *Biographia Literaria*, *Stateman's Manual*, *Aids to Reflection*, *The Friend*, and *Table Talk* (JMN 4-5). Emerson was impressed by Coleridge's notion that "language thinks," is alive (JMN 5:9), and that nature is a language, "Symbolical, one mighty alphabet" (EL 1:25).¹³

Coleridge's theory of symbol is based on his appropriation of the organic form of Goethe, which he learned via F.W. Schelling, whose work he translated.

Like symbol, organic form is an idea of fluid energy; it is opposed to the idea of mechanical form, which gives shape to allegory.

The form is mechanic, when on any given material we impress a pre-determined form, not necessarily arising out of the properties of the material;--as when to a mass of wet clay we give whatever shape we wish it to retain when hardened. The organic form, on the other hand, is innate; it shapes, as it develops, itself from within, and the fulness of its development is one and the same with the perfection of its outward form. Such as the life is, such is the form. Nature, the prime genial artist, inexhaustible in diverse powers, is equally inexhaustible in forms . . . (*Lectures I* 495)

Mechanical form, like allegory for Coleridge, "changes a phenomenon into a concept, a concept into an image, but in a such a way that the concept is still limited and completely held in the image" (*Misc. Crit.* 29). Both use visible phenomena to stand for an invisible, abstract idea; both are based on a "difference" between the visible and the invisible, in which the visible is subordinated to the invisible, is used as an example to illustrate it, as a sign to point to it. In contrast, organic form is, like symbol, shaped from within by immanent force. Goethe's definition of symbol provides the basis for Coleridge's: in the symbol, the "general is in the particular, expresses the particular, without thinking of the general or pointing to it" (qtd. in Baeumar 10). The symbol doesn't point to or stand for its meaning, but is the meaning that it expresses. As Coleridge writes, a symbol is a "part of the whole of which it is representative" (*Lectures 2*: 417-18). Like organic form, in which the visible part is one and the same with the invisible whole that

shapes it from within, symbol "always partakes of the reality which it renders intelligible: while it announces the whole, it abides itself as a living part" (*Lay* 30). For Goethe, a symbol is a "particular that represents the more general, not as a dream or shadow, but as a living momentary revelation of the Inscrutable" (qtd. in Baeumar 10).

Both Edwin Honig and Angus Fletcher correctly identify the oversimplifications inherent in Coleridge's distinctions between allegorical/mechanical form and organic/symbolic form and in the critical tradition these distinctions engendered (44-51; *Allegory* 13-19). While certainly not all allegories can be reduced to mechanical form or sign, and while not all symbols can be separated from allegories, it is clear that Coleridge's distinctions were definitive for Emerson. For him, the more words are symbolic, the more they resemble organisms. Indeed, both Paul and Brown propose that Emerson came to awareness of nature as "symbol" in the *Jardin* (110; 63). Emerson writes in "The Poet" that the symbolic language of poetry is "alive" and "like the spirit of a plant or an animal it has an architecture of its own, and adorns nature with a new thing" (*CW* 3:6). In *Nature*, Emerson echoes his early theory of language in "The Uses of Natural History," placing more emphasis on nature as symbol. His well known tripartite formula states that "words are signs of natural facts," "particular natural facts are symbols of particular spiritual facts," and that "nature is a symbol for spirit" (*CW* 1:17). Emerson distinguishes between sign and symbol: while words are signs, things are symbols. (However, in calling inspired language "perpetual allegories," Emerson does not necessarily separate symbol from allegory). Things

as symbols, echoing Coleridge, partake of the reality they symbolize. Emerson writes in *Nature* that each thing in nature is both related to and partakes of "the perfection of the whole" (CW 1:27). The more words are symbolic, the closer they come to things. "A work of art is an abstract or epitome of the world. It is the result or expression of nature, in miniature" (CW 1:16-17). The ideal poet's "speech flows with the flowing of nature" (CW 3:12). His naming is "a second nature, grown out of the first, as a leaf out of a tree" (CW 3:13). While the mystic, like Swedenborg, "nails a symbol to one sense," the poet knows that "all symbols are fluxional; all good language vehicular and transitive, and is good, as ferries and horses are, for conveyance, not as farms and houses are, for homestead" (CW 3:20). As Richard Poirier and Stanley Cavell have shown separately, Emerson style is best characterized as transitional, in that his tropes, like vehicles, carry readers into action.

A poetics of symbol was perhaps possible only after the change in *episteme* produced by Cuvier's work, which showed that organisms are products of force that courses within and through them, not acting on them from a distance. After Cuvier, things could be seen not as discrete entities acted on externally, but as events of external and internal forces. Emerson's engagement with science opened up a book of nature and a natural poetics in which things and words were not signs--images or shadows that stood for abstract meanings and external forces--but symbols--dynamic patterns of the energy which reveal the immanent energy that animates them. In sum, symbol suggested to Emerson that words could express the abundant, polysemous, sublime forces of nature, could be the "points" on

which "the whole force of Creation" is "concentrated" (*EL* 1:72).

V. The Electromagnetic Book of Nature

1. *Naturphilosophie* and Electromagnetism

Concurrently with his reading in Cuvier, Goethe, and Coleridge, Emerson was becoming aware of Faraday's work in electromagnetism and Davy's in electrochemistry. He found in the British scientists' work a version of Goethe's organicism and the basis for electrifying Coleridge's poetics of symbol into his electromagnetic poetics. With the new information provided by work in electricity, Emerson could trope Goethe's morphology into electromagnetic fields of force and Coleridge's ideal of the poem as plant into an ideal of the poem as a grain of water containing the charge of lightning. While the influence of Goethe and Coleridge on Emerson cannot be underestimated and is certainly not diminished by his attention to electricity, his interest in electromagnetism provided a less idealistic, more empirical way of conceiving nature than organicism offered and rich metaphors for guiding and describing his poetics. His engagement with the work of Davy and Faraday in the 1830's suggested to him that the animating force of nature may not be the organic life celebrated by Goethe and Coleridge, but electricity. The book of nature, the work of Davy and Faraday implied, is charged, a pattern of energy. Emerson translated this insight into the formal elements of his essays, attempting to conduct nature's spherules of force into the circuits of his words.

Historians of science agree that the German *Naturphilosophie* of Goethe

and his contemporaries and early work in electromagnetism had similar agendas (Doran, Williams, Hesse). Both relate back to Immanuel Kant's work on forces. In his *Critique of Pure Reason*, Kant denied our ability to know matter, the *ding an sich*. In the absence of absolute knowledge of matter, we learn of substances in space not by objectively perceiving them but by virtue the force that they exert: "We know substance in space only through the forces which work in this space, either by drawing others to it (attraction) or by preventing penetration (repulsion and impenetrability)" (qtd. in Williams, *Faraday* 61). Kant restated this insight in *Metaphysical Foundations of Natural Science*, when he wrote that "Matter fills space, not by its pure existence, but by its active force" (qtd. in Williams, *Faraday* 62). As L.P. Williams, Faraday's biographer, writes, "Having banished matter, Kant had removed the duality of matter and spirit," the foundation of eighteenth-century science (*Faraday* 161). *Naturphilosophie*, a movement of thought inspired by Kant and embodied by Goethe and Schelling, held that nature is driven by forces of polar opposition. It explained all phenomena as manifestations of these forces. *Naturphilosophie* expressed the view "that nature's dynamism is innate in the force-plenum and that all particulars are aspects of one dynamic unity" (Doran 147). This view that "there was some underlying connection between all the various forces of nature" influenced the first discoverer of electromagnetism, H.C. Oersted (Hall 254). He opened the possibility of making the "synthesizing program" of *Naturphilosophie* concrete and scientifically verifiable when he found the relationship between electricity and magnetism in 1819. In 1813, Oersted previsioned his subsequent discovery by suggesting that he

could convert electricity into magnetism because "all phenomena are produced by the same original power" (qtd. in Doran 147). Faraday partially verified this vision in 1831 by discovering electromagnetic induction, which demonstrated that electricity was a force that pervaded matter. Indeed, at this early stage of his career, he had already supposed that, as William Berkson writes, "forces themselves are the sole physical substance" (50). For Faraday, "all distinction between matter and force" was "abolished" (50). He fully demonstrated this insight in 1845 by showing that matter was comprised of electrically charged spheres of force, illustrating that "particles are places where physical forces converge to a point" (50).

It was Coleridge, returning from a trip to Germany in 1798, who brought Kant's ideas to England. Subsequently, Coleridge's influence upon English science became, Williams writes, "incalculable" (*Faraday* 63). For Coleridge, Kant's reduction of the essence of matter to the action of force opened up the possibility of a universal science of both matter and spirit. He wrote in the *Biographia Literaria*: "For since impenetrability [matter] is intelligible only as a mode of resistance its admission places the essence of matter in an act or power, which it possesses in common with spirit; and body and spirit are therefore no longer absolutely heterogeneous, but may without any absurdity be supposed to be different modes, or degrees of perfection, of a common substratum" (qtd. in Williams, *Faraday* 63). This position had appealed to Oersted, and also to Coleridge's friend Humphry Davy, the mentor of Michael Faraday. Indeed, work in electromagnetism fueled interest in *Naturphilosophie* in England and on the

continent in the nineteenth century. Williams writes that "the sense of interconnectedness of phenomena which followed upon the discovery of galvanism and of the electric current served to revive an organic concept of nature which was in direct opposition of the mechanical ideas of the orthodox" (*Faraday* 63). For Davy and Coleridge, God was an active, vital force who generated the universe and its laws. Coleridge conflates organic and electromagnetic language in expressing this view:

. . . in the world we see everywhere evidences of a unity which the component parts are so far from explaining, that they necessarily presuppose it as the cause and condition of their existing as those parts; or even of their existing at all. . . . This crocus, for instance, or any other flower That the root, the stem, leaves, petals, etc., cohere to one plant, is owing to the antecedent power or principle in the seed, which existed before a single particle of the matters that constitute the size and visibility of the crocus, had been attracted from the surrounding soil, air and moisture. (qtd. in Williams, *Faraday* 64).

Williams writes that for Coleridge, the universe was a "cosmic web, woven by God, and held together by the crossed strands of attractive and repulsive forces" (*Faraday* 64).

Davy learned of Kant by way of Coleridge. Davy worked to substantiate the metaphysical foundations of the thought of Kant, Coleridge, and *Naturphilosophie* with his work in electrochemistry. After Coleridge returned from Germany in 1798, he spoke and wrote passionately of the *Naturphilosophie*

of Schelling. Subsequently, Davy adopted new words in his lectures, like "energies," "powers," and "agencies."¹⁴ Both Davy and Faraday worked to reconcile the universal antagonism of opposing forces celebrated by *Naturphilosophie* with specific chemical substances (Williams, *Origins* 68-69). In *Elements of Chemical Philosophy*, which Emerson withdrew from the Boston Athenaeum Library in 1832, Davy wrote "Matter may ultimately be found to be the same in essence, differing only in arrangements of its particles, or two or three simple substances may produce all the varieties of compounds (132; qtd. in Chai 151). And: "If that sublime idea of the ancient Philosophers which has been sanctioned by the approbation of Newton, should be true, namely, that there is only one species of matter, the different chemical, as well as mechanical forms of which are owing to the different arrangements of its particles, then a method of analysing those forms may probably be found in their relations to radiant matter" (164; qtd. in Chai 151). In 1807, Davy had already shown that these chemical elements were electric, thus paving the way for Faraday to prove conclusively that the vital force conjectured by Kant, Coleridge, and *Naturphilosophie* was electricity. As Oliver Sacks observes, it is "tantalizing" to think of Davy as a "bridge between the idealistic universes of Leibniz and Schelling" and "the modern universes of Faraday, Clerk Maxwell, and Einstein" (56).

2. Emerson and Electromagnetism

Emerson was fascinated with the possibility that science might reveal the force underlying life. Where Goethe, Cuvier, and Coleridge were most

responsible for his early attempts at formulating a synthesis, journal entries of 1833 and 1835 suggest that Emerson wished for a more concrete, scientific account of this force than *Naturphilosophie* and organicism could offer. In 1833, he praised the fact that the speculations of the philosophers may have been verified, at long last, by Faraday in his "great long expected discovery of the identity of electricity & magnetism lately completed by Dr. Faraday obtaining the spark from the magnet & opening almost a . . . door to the secret mechanism of life and sensation . . . " (*JMN* 4:94). Just where Emerson got this information is unclear, as the lists of Emerson's reading compiled by Kenneth Walter Cameron and Walter Harding contain no record of Emerson reading about Faraday before 1833. He could have learned it from many places, as "[n]ews of the discovery [of electromagnetic induction] caused a tremendous reaction around the world" (Myer 59). The fact the source of Emerson's knowledge cannot be ascertained is unimportant, for he was clearly aware of Faraday's discovery of electromagnetic induction. In this 1833 journal entry, Emerson conjectures that electromagnetism reveals electricity as the underlying principle of life. Two years later, in 1835, he intimates that Goethe's formulation of the principle of life is no longer an adequate description of the forces of nature. He compares the "trifles" of wishing to know "why the star form is so oft repeated in botany" or "why the number five is such a favorite with nature" to the "laws" opened by the "two wonders of electromagnetism & of the polarisation of light" (*JMN* 5:42). This passage is almost an outright critique of Goethe's archetypal morphology and of Sir Thomas Browne's geometrical Platonizing in *The Garden of Cyrus*. Goethe, as noted

earlier, believed that the leaf was the archetypal form inherent in all phenomena. This archetype, the historian of biology Ernest Mayr asserts, was imbued with Platonic idealism. Goethe did perform dissections in order to provide a basis for his morphology; however, as Mayr notes, his efforts were not so much real science as a search for an underlying Platonic form (457-458). Emerson's mention of Goethean morphology in connection with Browne's efforts to discover the form of the quincunx in natural phenomena further suggests that Goethe, in his mind, was more a Platonist than a scientist (as, indeed, Emerson probably was as well, for all of his love of hard science). Like Plato, whose later work in the *Timaeus* attempts to locate a geometrical figure in each of the four elements (53c-56c), Browne looks for an archetypal geometrical form pervading nature.

Emerson contrasts the scientific "laws" of electromagnetism and the polarisation of light to these idealistic conjectures. The laws of the polarisation of light, developed most notably by Augustin Fresnel and Sir David Brewster (whom Emerson mentions in an 1834 lecture) in the early nineteenth century, were based on the theory that light waves move forward in transverse vibrations, be they vertical or horizontal, perpendicular to the direction of propagation (Taton 159-160; 310-312). In other words, light waves move in opposite directions at the same time, both forward and up and down or side to side. For this reason, they resemble electromagnetic waves, which also move forward in transverse, or polar, waves. Indeed, Faraday drew upon the theory of polarisation of light in 1834 to illustrate the structure of polar tensions in electrolytic conductors (*Experimental* 951) and suggested in 1838 that electromagnetic waves, like light waves, proceed

in transverse waves and are polarized into currents of attraction and repulsion (1653-1665).¹⁵ He hypothesized "that all *polar forces* act in the same general matter" (1665). James Clerk Maxwell proved Faraday's hypothesis on the connection of electromagnetism and light in the middle of the nineteenth century by identifying light and electromagnetic vibrations (Taton 163).

Remarkably, in 1833 Emerson intuited the hypothesis of Faraday and the proof of Maxwell when he wrote in his journal, "Elementary forms of bodies revealed by polarization of light" (*JMN* 4:416). He then lists "Polarity of matter. light. electricity. galvanism. magnetism." This entry, overlooked by scholars, is extremely important for understanding Emerson's knowledge of science. Here he shows that he not only understood the work of his day in electromagnetism and light theory, but also that he was fully aware of their wide-reaching implications. These brief phrases, hidden in his journal, reveal a forgotten dimension to Emerson's thought, casting a new light on his artistic agenda. His praises of force were far from impressionistic or "poetic"; they were invocations of the scientific facts of his moment. Indeed, for Emerson, electromagnetism and polarisation of light provided scientific proof for organic form. They *electrified* Goethe's "life" and Coleridge's symbol. From 1833 through the writing of *Nature* in 1836 until near the end of his life, these branches of science showed him that the force of life was palpable, electric, verifiable. In "The Humanity of Science," an 1836 lecture, Emerson praises the "wonders opened" by the electromagnetism of Faraday, Oersted, and Ampere, and describes the force of all life in terms of electromagnetism. As Emerson's thought matured, he "galvanized" organic life.

While Emerson praised the "spherules" that the physiologist finds at the foundation of each plant and animal in 1834, he celebrated Faraday's "spherules of force" as the essentials of all matter in an 1854 lecture that became the essay "Poetry and the Imagination" in 1876.¹⁶ Likewise, the "point" upon which the "force of Creation" is concentrated in 1834 became in 1877 Faraday's grain of water having electrical relations equivalent to lightning . As noted, these insights--that matter is a polarized field, comprised of spherules of force--became the patterns for Emerson's poetics.

In one of his earliest mentions of electromagnetism, Emerson replaces Goethe's principle of life with electricity. Goethe's idea of life as as progressing "from an unknown center to an unknowable goal" is explained by electromagnetism, the "common law that pervades nature from the deep centre to the unknown circumference." In "The Humanity of Science," after asserting that the laws of light and heat are analogous to electricity and magnetism, Emerson writes that "Magnetism and Electricity are shown to be identical,--the spark has been drawn from the magnet and polarity communicated to the needle by electricity. Then Davy thought that the primary cause of electrical effects and of chemical effects is one and the same,--the one acting on masses, the other on particles" (*EL* 2:29). After listing other analogies between laws in crystallization and harmonic sounds, Emerson virtually echoes Davy's rendition of the "sublime idea" of an underlying principle of matter. He praises

the sublime conjecture sanctioned by the minds of Newton, Hooke,

Boscovich, and now of Davy, that the forms of natural bodies depend upon

different arrangements of the same particles of matter; that possibly the world shall be found to be composed of oxygen and hydrogen; and that even these two elements are but one matter in different states of electricity;-all these, whether they are premature generalizations or not, indicate the central unity, the common law that pervades nature from the deep centre to the unknown circumference. (*EL* 2:29)

3. Emerson and Davy

Emerson invokes Davy to suggest that matter is electricity. He was already quite familiar with Davy's work by 1834 (Chai 151). He had read, as mentioned above, Davy's *Elements of Chemical Philosophy* in 1832; in that same year he read *Elements of Agricultural Chemistry* while he had perused *Elements of Chemical Analysis* in 1828. Emerson would have been especially impressed by the closing remarks of Davy's historical introduction to chemistry in *Elements of Chemical Philosophy*: "The more the phenomena of the universe are studied, the more distinct their connection appears, the more simple their causes, the more magnificent their design, and the more wonderful the wisdom and power of their Author" (42).

He was more impressed, as the passage from the lecture shows, with Davy's 1807 discovery that the forces controlling chemical affinity were electrical and that elements had an electrical charge (Taton 274). By chemical decomposition with voltaic electricity--later called electrolysis by Faraday--Davy showed that electrical affinity--attraction and repulsion--is "the power by which different

species of matter tend unite in one compound" (*Agricultural* 202). In suggesting that the building blocks of matter are electrical, Davy extended the atomic theories of his countryman John Dalton. In *A New System of Chemical Philosophy* (1808), Dalton had questioned the corpuscular theory of atoms held by Boyle and Newton. Dalton, like Boyle and Newton, proposed that atoms were indivisible and indestructible; yet he diverged from his scientific forebears in suggesting not that atoms were made of one homogeneous material, but that there were as many different kinds of atoms as there were elements. Also, in ascribing to atoms relative weights he found a way, for the first time, of accounting for the qualities of atoms, moving ideas about them away from conjecture and toward fact (Brock 135-137). As William H. Brock writes, he thus "married the theory of atoms with tangible reality" (135). Through his experiments in electrical decomposition, Davy was able to suggest that Dalton's atoms were electrical phenomena. In sending an electrical charge through solutions in water, he was able to separate positive elements from negative as well as isolate elements. In *Elements of Chemical Philosophy*, he wondered whether atoms were corpuscular or "physical points endowed with attraction and repulsion" (39).

Conjectures like these provided a foundation on which Faraday could build in proving that atoms were in fact electrical points. Indeed, as Oliver Sacks points out, Davy's work was central in permitting scientists to trope the word "energy" away from its customary meaning of "intellectual and moral vigor" to its modern, scientific connotation (51n). At the first lecture of Davy that Faraday attended at the Royal Institute in London, he heard Davy proclaim the possibility that the

Kantian idea that matter was continuous and generated by a universal force might be scientifically verifiable in terms of electricity.

In solids the matter exerts its attractive powers and remains fixed. In fluids there is an equilibrium between attractive and repulsive powers. In Gasses the repulsive power preponderates over the Attractive but is not sufficiently strong to overcome the specific nature of the body and in Radiant matter the repulsion is free and unconfined and projects the body in right lines.

(qtd. in Williams, *Faraday* 125).

Faraday learned from Davy, then, that physical states of matter were merely functions of the powers of attraction and repulsion. By suggesting that every body could exist in the form of an electrified solid, liquid, or gas, Davy asserted the probability that Faraday would later verify: matter was continuous, in flux, and comprised of forces .

4. Faraday

Emerson, perhaps because of his own reading in Coleridge and Goethe, understood the implications of Davy's work. Moreover, as noted above, by 1833 he was also aware that Faraday's idea of electromagnetism had proved that electricity was the force underlying matter. In citing the identity of magnetism and electricity in the passage in which he praises Davy, Emerson seems to conflate the work of Faraday, Oersted, and A.M. Ampere. Indeed, later in the same lecture, Emerson praises the "wonders opened" by all three (*EL* 2:38). All three scientists worked to verify Kant's conjecture that matter is energy and Davy's hypothesis that

matter is electric, with Faraday providing conclusive verification in 1831 when he discovered electromagnetic induction.

As noted earlier, it was Oersted who first discovered the link between electricity and magnetism. In 1819, he accidentally put a wire containing an electric current parallel to a magnetic needle and noticed that the needle was deflected. After repeating the experiment several times, he finally concluded that magnetism and electricity were related. Just as two magnets set side by side deflect each other, so do two galvanized wires. Taton notes that though Oersted's theory was ground-breaking, he still presupposed, in a Newtonian manner, that electricity was comprised of particles of matter that conflicted with one another in space (185).

A week after Oersted's discovery, Ampere discovered the relationship between positive and negative forces by demonstrating that two parallel, electrified wires attract each other if the currents run in the same direction, and repel each other if the currents run in opposite directions. On the basis of this experiment, he was able to establish the electrodynamic law that forces of attraction and repulsion between galvanized conductors are directly proportional to the currents in the conductors. Ampere went on to prove four laws of electrodynamics, primarily by means of a galvanometer, a device that detects electrical current by suspending the needle of a compass from a horizontal wire stretched in the plane of a magnetic field. When an object charged with a current is placed near the needle, the needle moves based on the intensity of the current. With a galvanometer, Ampere was able to measure the intensity of currents running through conductors as well as

their positive and negative charges. Though Ampere was able to extend and modify Oersted's discovery, he still maintained that electricity is propagated by a fluid, like Oersted bogging it down with Newtonian materiality (Taton 187-191).

When Emerson wrote of polarity being communicated to the needle in the above quote from "The Humanity of Science" (*EL* 2:29), he could easily have been referring to Ampere's use of the galvanometer. He had read of Ampere in an 1827 volume of the *Quarterly Review*, in which *Recueil d'Observations Electro-Dynamiques* was reviewed. However, he could also have been referring to Faraday's discovery of electromagnetic induction. Faraday's work did away with the idea of a "material" electric current when he discovered electromagnetic induction, which depended on "seeing the forces between currents in terms of the magnetic field produced by the currents in the intervening medium" (Hesse 218). In sum, Faraday proposed the idea that electrical energy was field of force independent of matter and that matter itself was essentially an electric medium. In August of 1831, Faraday showed that changing the current in one conducting wire can change the current in a neighboring wire. In his famous experiment, he wound copper wire around one side of an iron ring (side A) and wound another copper wire around the other side (side B). Between each of the coils was the bare iron ring. The wire coiled around side B was attached to a galvanometer. Faraday found that when he charged the wire on side A, a current could be detected in the wire on side B. He concluded that a "wave of electricity" traveled through the iron ring and charged the wire on side B (Williams, *Faraday* 183; Faraday, *Experimental* 27). Faraday conducted several more experiments to demonstrate

electromagnetic induction, each of which showed how magnetic waves could induce a current just as an electric charge could. For example, Faraday once rotated a copper disk, whose axis and edge were connected to a galvanometer, between the giant horseshoe magnet of the Royal Society. As the disc turned, the needle moved. Faraday concluded that the force that moved the needle was a result of the conductor cutting through the magnetic field. As the conductor moved through the lines of magnetic force, it gained what Faraday would twenty years later call an electromagnetic force (Taton 194-197).

This discovery of induction led Faraday to ponder, for the next thirty years, two problems: how electric and magnetic forces were transmitted through space, and how these forces were related to matter (Williams, *Faraday* 205). Through a series of experiments throughout the thirties, Faraday concluded that magnetic and electric energy were lines of force that cut through the ether that filled all space. When a conductor cut across their path, it was induced with an electric current. He eventually asserted that these lines of force flowed through all space (204). This idea, which he had formulated by 1833, was the seed of his mature field theory. This theory supposed that electric and magnetic fields of force filled all space, including matter. The field theory worked to substantiate the Kantian conjecture that matter was energy (Harman 81). He articulated this view in 1844 in "Speculation touching electric conduction and the nature of matter":

The view now stated of the constitution of matter would seem to involve necessarily the conclusion that matter fills all space, or, at least, all space to which gravitation extends (including the sun and its system); for

gravitation is a property of matter dependent of a certain force, and it is this force which constitutes matter. In that view matter is not merely mutually penetrable, but each atom extends, so to say throughout the whole of the solar system, yet always retaining its own centre of force . . . Hence matter will be continuous throughout. (qtd. in Harman 81; Faraday, "A Speculation" 855)

Faraday's work in induction emphasized Davy's idea that matter contains electricity, and proved that electricity occurs in waves of force. Doran asserts that Faraday's work in the second quarter of the nineteenth century conclusively called into question the Newtonian, mechanical worldview of "atoms in a void" and "forces acting between material particles" and planted the seeds for "notions of the electromagnetic field as a nonmaterial, continuous plenum and material atoms as discrete products of the plenum" (134). By 1845 Faraday had developed his theory of induction, which suggested that matter was charged with contiguous, electric particles, into the theory of fields of force in which matter is comprised of points or atoms with "an atmosphere of force grouped around it" (qtd. in Hesse 200). Hesse writes that Faraday saw matter at this point as fields of force, understanding the universe not in the mechanistic way of Newton, but as "continuous action . . . of forces filling spaces" (201).

5. Emerson and Faraday

Based on the aforementioned journal entry of 1833 in which Emerson praises Faraday's discovery of the "secret mechanism" of life and his mature view

of matter as "spherules of force," it seems that Emerson had Faraday, not Ampere or Oersted, preeminently in mind in the above quoted lecture passage in which he celebrates the identity of magnetism and electricity and goes on to cite Davy's conjecture that matter is electricity. The language of the full journal entry of 1833 suggests that Emerson had read or heard about Faraday's early lectures on induction. In the entry, worth quoting again, Emerson commends the "great long expected discovery of the identity of electricity & magnetism lately completed by Dr. Faraday obtaining the spark from the magnet & opening almost a . . . door to the secret mechanism of life and sensation in the relation of the pile of Volta to the electrical fish" (*JMN* 4:94). Here Emerson is perhaps referring to two of Faraday's papers that would eventually appear in volume one of *Experimental Researches in Electricity*. In referring to Faraday obtaining a "spark," he could be pointing to Faraday's November 1831 paper on electromagnetic induction, in which he explained his inaugural induction experiment with coils wrapped around the iron ring. By rubbing one of the coils with charcoal, he obtained a spark when a current ran through the wire (32). After describing his induction experiments, Faraday suggests that it is likely that all matter has an electrical condition (60). If the wire used as a conductor both carries and produces a current, it seems likely that all matter is capable of conducting and generating a charge. Indeed, in the second paper to which Emerson likely points, first read January 10, 1833, Faraday relates the electricity from Alessandro Volta's pile, the precursor of the battery, to the electricity located in animals, like the Torpedo, an electric fish. Faraday goes on to relate all forms of electricity (265). He also refers to a spark several times in

this paper in describing the effects of various sorts of electricity, ranging from voltaic to animal. In considering each form of electricity, he registers its tension of positive and negative forces, motion, magnetism, chemical decomposition, physiological effects, and spark. This paper is nothing less than an introduction to the science of electricity, from which Emerson could have learned about electromagnetism, electrical decomposition, and the identity of different forms of electricity. Faraday's conclusion in this paper must have struck Emerson: "The *general conclusion* which must . . . be drawn from this collection of facts is that *electricity, whatever may be its source, is identical in its nature*" (360). This finding could certainly inspire in Emerson the idea that Faraday had discovered the secret mechanism of life.

Whether Emerson was familiar with only the second paper or both, it is clear that he knew of Faraday's groundbreaking discovery. Though Faraday did not announce his mature field theory, an implication of induction, until 1845, Emerson had intuited this important hypothesis as early as 1833, when he conjectured that Faraday had discovered "the secret of life," and again in the 1836 lecture "The Humanity of Science" when he noted that electromagnetism had revealed the essentials of matter. Emerson early sensed that matter was continuous energy. As Sherman Paul notes, Emerson was early attracted by magnetism; he saw in it, as Goethe had, "*a primary phenomenon*" (*JMN* 16:286; italics mine). In 1827, he described an experiment very similar to the one Faraday conducted to demonstrate lines of force: "I have seen as skilful experimenter lay a magnet among filings of steel, and the force of that subtle fluid, entering each fragment,

arranged them all in mathematical lines, and each metallic atom became in its turn a magnet communicating all the force it received of a loadstone" (*JMN* 3:95; qtd. in Paul 142-143). Though Emerson still used the Amperean idea of liquid to describe magnetic force, he understood that the force occurs in lines, a fact that Faraday discovered in the early 30's when he placed iron filings on a sheet of paper near a magnet. He noticed that the filings will form a pattern of lines that stretch from north to south, along the poles of the magnet. Faraday concluded that the lines for force were present even if the filings were not, and that the magnet produced a field of force, just as electrically charged objects did (*Experimental* 3070-75).

Emerson's interest in Faraday did not lessen, as is demonstrated by his attending a lecture by the British scientist on his second trip to Europe in 1848. After hearing him in London in April of that year, three years after he had proposed his field theory, Emerson wrote in his journal that this scientist had discovered that nature was comprised not of ultimate atoms, but of forces. As Paul reminds us, soon after this entry, he wrote in the essay "Greatness" that Faraday had discovered that "every chemical substance would be found to have its own charge, and a different [magnetic] polarity" (qtd. in Paul 143). This Emerson translated to mean that each mind too had its own attraction, its own genius. In an 1854 lecture that would develop to become the "Poetry and Imagination" in 1876, Emerson shows that he understood the implications of Faraday's field theory. The passage is worth quoting again: nature is "creation . . . on wheels, in transit, always passing into something else . . . [M]atter is not what it appears

[C]hemistry can blow it all into gas. Faraday . . . taught that when we should arrive at the monads, or primordial elements . . . we should not find cubes or prisms, or atoms, but spherules of force" (*W* 8:4).¹⁵ Emerson continued to feel the force of the scientist's ideas throughout his life. In his 1871 journal, he includes him in a list along with Goethe and others as a poet in science (*JMN* 16:250), and in "Perpetual Forces," a lecture published in 1877, he praises Faraday's discovery of electricity in the passage about the "grain of water" (*W* 10:60).

6. The Electromagnetism and Emerson's Model of Matter

A.N. Whitehead's work on nineteenth-century science has neatly confirmed Emerson's intuitions about Faraday's model of matter. Electromagnetism was one of the four groundbreaking ideas of the nineteenth century that displaced the idea of static "mass" being acted on by external forces. Mass became instead the name for a unit of energy (96). As Whitehead describes, electromagnetic fields helped to provide the basis for a science of organism in which things, "emergences" of patterns of energy, "events," or dynamic, evolving sites of interaction between intrinsic and extrinsic energy (97-99). Emerson's appropriation of the idea that matter is a pattern of spherules of force prefigures the subatomic universe of quantum physics, in which the world is comprised of bundles of dynamic, unpredictable, volatile energy, in which dynamic matter is created and generated by some mysterious force (Allen, *Waldo* 576-577). Indeed, Albert Einstein and Werner Heisenberg credited Faraday with having provided a new picture of

reality that led, respectively, to relativity and quantum theory (Heisenberg 95; Einstein and Infeld 125). As Whitehead argues, both relativity and quantum theory, though maintaining different conclusions about the continuity of matter, suggest a universe in which things are not static entities, but events of energy. Allen succinctly sums up this link between Faraday, Emerson, and twentieth century physics when he writes that Emerson's and Faraday's "spherules of force" correspond to the atom uncovered by physicists of our century, which is "not something stable and solid but [a bundle] of energy" that exists "in fields of energy" (*Waldo* 576).

Electromagnetism seems always in the background not only of his passages on polarity, noted above, but also of his celebrations of the energy of nature and of his assertions that things are not stationary, solid, but "emanations." In two pieces especially, the lecture "The Method of Nature" and the essay "Circles," both from 1841, Emerson writes paeans to nature's fields of force. In "The Method of Nature," Emerson claims that for the scientist, "a mysterious principle of life must be assumed, which not only inhabits the organ, but makes the organ" (*CW* 1:125). This principle could well recall Goethe's, but Emerson's characterization of it suggests fields of force: in nature, generated by this principle, "smoothness is the smoothness of the pitch of the cataract. Its permanence is perpetual inchoation. Every natural fact is an emanation, and that from which it emanates is an emanation also, and from every emanation is a new emanation. If anything could stand still, it would be crushed and dissipated by the torrent it resisted . . ." (*CW* 1:124). In nature, one finds no distinction between matter and energy. Things in

nature are not discrete entities, but related to all other things, patterns inhabited by the same energy: in nature, "This refers to that, and that to the next, and the next to the third, and everything refers" (*CW* 1:125). In "Circles," another of Emerson's rhapsodies to force, nature is not permanent and stable, but a field of continuous force: "There are no fixtures in nature. The universe is fluid and volatile" (*CW* 2:179). "Nothing is secure but life, transition, the energizing spirit" (*CW* 2:189). This language could be perhaps be attributed to Emerson's Neo-Platonism; however, Emerson makes no distinction between matter and energy, but treats nature as field of volatile force.

Moreover, in "Spiritual Laws," also in 1841, Emerson attributes the force of great leaders to their "electricity." These figures, like Caesar and Napoleon, open themselves to the currents of force running through nature. "Their success lay in their parallelism to the course of thought, which found in them an unobstructed channel; and the wonders of which they were the visible conductors, seemed to the eye their deed. Did the wire generate the galvanism?" (*CW* 2:79). These men are conductors of galvanized charges; in other words, they are "in sync" with nature. Later in same essay, Emerson calls the power of nature, its spiritual laws, "divine circuits," conductors of electricity. He continues in this electromagnetic mode in the 1844 version of "Nature," when he observes that "Without electricity the air would rot" (*CW* 3:107). In the same essay, he indirectly alludes to Faraday's "grain of water": "The whirling bubble of the brooks, admits us to the secret of the mechanics of the sky" (*CW* 3:105). Emerson in the same year compares universal truths to magnetism: "The magnetism which arranges tribes and races in one

polarity, is alone to be respected; the men are steel-filings . . . Let us go for universals; for the magnetism, not for the needles" (CW 3:135).

VI. Electromagnetism and the Sublime Science

The conclusions reached in this chapter loop back to chapter one. The three currents of the sublime science are seen more clearly through the frame of electromagnetism. As shown, at the outset of his career, Emerson was interested in finding a scientific basis for his aesthetics. Faraday showed him that all phenomena, from the smallest drop to the circling planets, are patterns on a continuum of electricity. The sensation of the sublime arises from a perception of this relationship between pattern and energy. ♪

Emerson's remarks on the sublime throughout his career are illuminated by his engagement with electromagnetism. As noted, in *Nature* Emerson deems sublime Euler's remark that scientific insight is "contrary to experience, yet . . . true" (CW 1:34). Faraday's discovery of the "secret mechanism of life" likewise counters sensory perception. The visible patterns perceived by our physical senses seem to be most primary; however, electromagnetism proves that an invisible energy is the essential of matter. The electrical charge of lightning is the source of the water drop. Kant's dynamic sublime, the sublime inspired by excessive force, is rendered scientifically and shown to be pervasive. All, from the ant to the stars, are condensations of vast systems of force. The sublime, as Emerson writes in "Fate," is the "infant" of "terrible force."

Work in electromagnetism provided a model for Emerson to conflate

aesthetics and science. These realms of experience, traditionally separated, were for Emerson a unity. Sublime art approaches nature; nature is a sublime work of art. While the philosophies of Plato or Plotinus and Goethe or Coleridge offered sublime worldviews, theorizing that matter is engendered, inhabited, and shaped by spirit or life, it was the conclusions of electromagnetism that drew the sublime away from the realm of speculation to the realities of science.

The next chapter shows how the elements of the sublime science are meshed in Emerson's practice. I analyze sites of linguistic vigor in *Nature*, showing how Emerson merges scientific insight, an aesthetic of the sublime, and powerful writing in an attempt to fashion a new vulgate of nature. This is followed by attention to Emerson's more discursive sequences. I detail how, after readers are jolted by the charged sites, they attend to passages of less compression more closely, finding that even the most static-seeming sentences and structures are volatile.

Notes

¹Several writers have described, either directly or indirectly, how Emerson based his theory and practice of literature on the book of nature, though none of them have detailed the electrical quality of the book. See F.O. Matthiessen's *The American Renaissance: Art and Expression in the Age of Emerson and Whitman* (30-44); Charles Fiedelson, *Symbolism and American Literature* (119-212); Jonathan Bishop's *Emerson on the Soul* (83-84); ; Sherman Paul's *Emerson's Angle of Vision: Man and Nature in American Experience* (60-65; 213-216); Lawrence Buell's *Literary Transcendentalism* (147-171); Mason Lowance's *The Language of Canaan: Metaphor and Symbol in New England from the Puritans to the Transcendentalists* (277-281); Lee Rust Brown, "Emerson's Museum," *passim*.

²The great synthesizer, though, of the cosmologies of Platonism and Christianity was Augustine, a thinker who profoundly influenced both medieval Catholicism and seventeenth-century Puritanism. Augustine knew the work of Plotinus, and adapted the Platonic model to Christian theology (Copleston 40-73, *passim*). For Augustine, as for Plato and Plotinus, the visible world was a reflection of the invisible one of spirit, in Augustine's case of the spirit of God. Augustine writes in *The City of God* that "the world itself, by its well-ordered changes and movements and by the fair appearance of all visible things, bears a testimony of its own, both that it has been created and also that it could not have been created save by God, whose greatness and beauty are unutterable and invisible" (11.4). We gain knowledge of God not only by contemplating the beauty of his visible creation, but also by reading his Holy Scripture, the Bible (*City* 11.3). Augustine's *On Christian Doctrine* is essentially a manual on how to properly interpret the scriptures as signs of God's revelation. Augustine transferred the metaphor of reading one's way to a knowledge of God to the visible world in a sermon on *Matthew*: "[T]he very countenance of creation is a great book. Behold, examine, and read this book from top to bottom" (qtd. in Jeffery 19). Jeffery asserts that from Augustine onward, the "idea that the Book of God's Words essentially accords with the Book of his Works is a keystone of Christian thought" (4).

³In his fascinating book *American Hieroglyphics: The Symbol of the Egyptian Hieroglyphics in the American Renaissance* (24-25), John Irwin equates Emerson's view of the book of nature with the medieval and renaissance one that Foucault describes in *The Order of Things*. He quotes as passage from Emerson's Goethe to substantiate his claim:

Nature will be reported. All things are engaged in writing their history.

The plant, the pebble, goes attended by its shadow. The rolling rock leaves its scratches on the mountain; the river its channel in the soil; the animal its bones in the stratum; the fern and leaf their modest epitaph in the coal. The falling drop makes its sculpture in the sand or stone. Not a foot steps into the snow or along the ground, but prints, in characters more or less lasting, a map of its march. Every act of the man inscribes itself in the memories of his fellows and in his own manners and face. The air is full of sounds; the sky, of tokens; the ground is all memoranda and signatures, and every object covered over with hints which speak the intelligent. (CW 4:261)

Certainly, Emerson's body of work, like that of Whitman which he inspired, contains multitudes, and there are passages echoing the medieval and Renaissance book of nature. But we must remember that Emerson almost always modifies this older tradition in two ways. One, as this passage from "Goethe" shows, nature's book is not static, but is always in the process of writing, so its meanings metamorphose. Two, Emerson's God is manifest in the world through spirit, which is volatile, energetic, and fluid, changing matter and thus the book of nature as it emanates through the universe. As we shall see, for Emerson spirit, biological life, and electricity are virtually interchangeable.

⁴For an excellent articulation of the complex traditions of typology, see Erich Auerbach's "Figura" in *Scenes from the Drama of European Literature*.

⁵As M.H. Abrams writes, "In typological theory the key persons, actions, and events narrated in the Old Testament are viewed as "figurae" . . . which are historically real themselves, but also "prefigure" those later persons, actions and events in the New Testament that are similar to them; alternatively, the Old Testament figures are called types and their New Testament correlatives antitypes" (*Glossary*). For example, *Romans* 5:14 states that Moses, the lawgiver of the Israelites, was a figure of Christ, the new lawgiver for the Christians. In typology, Moses and others persons and events of the Old Testament were held to be prophecies of the higher truth of Christ who came to fulfill them (Brumm 6-33, *passim*).

⁶For example, both William Bradford and John Winthrop in their respective histories read the migration of the Puritans to America as typical of the flight of the Israelites out of Egypt. Bradford reads the Pilgrims' arrival at Cape Cod in 1620 as a sign of their participation in the spiritual plan of God, as they are a new version of the children of Israel being led out of bondage to establish a city of God (1.9). In his lay sermon "A Model of Christian Charity" Winthrop compares the Puritans' establishment of New England to the spiritual city of Christians

announced by Christ in *Matthew*. In fulfilling these types, the Puritans were also fulfilling the New Testament prophecy of establishing a New Jerusalem, of becoming a "city on a hill."

⁷In his *Journal*, Winthrop interprets the fact that of all of his son's books, only the Anglican Book of Common Prayer was eaten by mice, as an instance of God's work in the world. In his sermon "God's Promise to His Plantations," John Cotton invokes the favored hermeneutic for interpreting the migration to America in reading the emigrants as types of the children of Israel. Mary Rowlandson interprets every visible event during her captivity at the hands of Indians as a sign of God's providence. In their diaries, Cotton Mather and Samuel Seward interpret a wide range of events, from visiting the privy to the power of lightning, as signs of God's intervention in the world.

⁸For additional discussion on Edwards's typology that extend and clarify the definitive studies of Brumm and Miller, see Mason I. Lowance, Jr.'s "'Images or Shadows of Divine Things' in the Thought of Jonathan Edwards."

⁹There are three excellent discussions of the overlap between medievalism and the emergence of modern science in the seventeenth century. See Willey (esp. 11-83); Bush, (27-50); and Nicolson, *The Breaking of the Circle*.

¹⁰As David Robinson shows in his article on Emerson's theory of animated matter and his experience in the Jardin, Jussieu's specimens were arranged to illustrate what A.O. Lovejoy has called "The Great Chain of Being," with the lowest forms of life being related to the highest in an ordered fashion. Cuvier, along with J.B. Lamarck and E.G. Saint-Hilare, held to this philosophical premise as well. However, Lamarck and Saint-Hilare held that lower forms mutate into higher forms, while Cuvier believed that species were fixed. While these debates are important for the history of evolution, they hold little weight in considering Emerson. Robinson is correct to point out that Emerson gained two basic insights from his experience in the Jardin, as well as from his reading of Cuvier: one, he learned that nature is not fixed, but evolving, an insight which led to his theory of animated nature; two, he found that he could take naturalism seriously as a basis for truth (507-510).

¹¹For a discussion of Emerson's relationship to Goethe, see Frederick Wahr's, *Emerson and Goethe* and Gustaf Van Cromphout's *Emerson's Modernity and the Example of Goethe* (1-13). Also see Robert D. Richardson, Jr.'s *Emerson: Mind on Fire*. Daniel B. Shea in "Emerson and the American Metamorphosis"

notes the influence of Goethe's work on plants on Emerson thought and art.

¹²In addition to Beach's work on Emerson's evolution (see Introduction), Jeffrey L. Duncan provides a good description of Emerson's relationship to Lamarckian evolution in *The Power and Form of Emerson's Thought* (11-15).

¹³See note five in chapter one of this study for works that detail Emerson's organic/flowing form.

¹⁴For an excellent discussion of the relationship between Coleridge and Davy, see Sacks, "The Poet of Chemistry."

¹⁵ Though the essay from which this passage comes was not actually published until 1876, Perry Miller tells us that Emerson drew on his early lectures, many of which were on science and most of which preceded *Nature*, in writing this essay (*American Transcendentalists* 196). Gay Wilson Allen reports that the 1876 essay originally appeared in the form of an 1854 lecture (*Waldo* 576).

Chapter Three

Nature's Sublime Book

And suddenly there came a sound from heaven as of a rushing mighty wind, and it filled all the house where they were sitting. And there appeared unto them cloven tongues like as of fire, and it set upon each of them. And they were filled with the Holy Ghost, and began to speak with other tongues, as the Spirit gave them utterance.

Acts 2: 2-4

Always the seer is the sayer.

Ralph Waldo Emerson
"The Divinity School Address"

I. A New Bible

1. A Vulgate of Nature

Emerson's interest in science was never separate from what might be called his religious sensibility. As Stephen Whicher and Sherman Paul have shown, Emerson believed science could connect man to the whole (90; 208-220). While Alan Hodder observes that "Emerson hardly learned anything from the Book of Nature that he had not already learned from the Book of Revelation" (38-39), science nonetheless revealed to him a physical basis for spiritual truths. Emerson writes in *Nature* that "All things are moral; and in their boundless changes have an unceasing reference to spiritual nature." All natural processes, "from the sponge up to Hercules, shall hint or thunder the laws of right and wrong, and echo the Ten Commandments Nature [is] ever the ally of Religion; lends all her pomp and riches to the religious sentiment" (CW 1:26). "Every natural process is a version

of a moral sentence"; a farm is a "mute gospel," with its "chaff and wheat, weeds and plants, blight, rain, insects, sun" (*CW* 1: 26). For Emerson, the "axioms of physics translate the laws of ethics" (*CW* 1:21). Emerson learned from the scientists that the "permanence is perpetual inchoation" (*CW* 1:124); "polarity . . . [is] in every part of nature" (*CW* 2:57); "[e]verything is medial" (*CW* 2:180); "every end is a beginning" (*CW* 2:179); "every thing is one thing and the other thing, in the same moment" (*CW* 3:139). Each of these scientific laws Emerson believed could be a basis for morality.¹

For Emerson, the closer the scientist approached to the prophet the better. While the prophets he respected--"David, Isaiah, Jesus"--"have drawn deeply from [nature]" (*CW* 1:26) in proclaiming their teachings, the scientists he most admired--"the heroes of science" Kepler, Galileo, Newton, Linnaeus, Davy, Cuvier, Humboldt--"are persons who added to their accuracy of study a sympathy with men, a strong common sense; and an earnest nature susceptible of religion" (*EL* 2:37). In a letter to Margaret Fuller in 1841, Emerson memorably describes his relationship to science, specifically to electricity.

There is a foolish man who goes up & down the country giving lectures on Electricity;--this one secret he has, to draw a spark out of every object, from desk, & lamp, & wooden log, & farmer's blue frock, & by this he gets his living. . . . Well, I was not an electrician, but an Idealist. . . . Now there is this difference between the Electrician . . . and the Idealist, namely, that the spark is to that philosopher a toy, but the dance is to the Idealist terror & beauty, life & light. It is & it ought to be . . . (*L* 2:385)

For Emerson the poet, science is important for revealing the "life & light" of the universe and our relation to them, not for merely dazzling audiences with strange effects. For Emerson, nature is the book of revelation, and the task of the science is to explain this text's significance. The "rapt saint" is the "only logician" (CW 1:122). For this reason, Emerson's ideal teacher will show that "the Ought, that Duty, is one thing with Science, with Beauty, and with Joy" (CW 1:93).

Nature aspires to be the scripture revealing this synthesis of science and religion. Alan Hodder notes that "No American writer since Jonathan Edwards is more thoroughly steeped in the Christian Bible than Ralph Waldo Emerson" (7). Several critics have shown how *Nature* was influenced by the Bible. As Hodder records in his study of the relationship between *Nature* and *Revelation*, F.O. Matthiessen, Warner Berthoff, and Laurence Buell show links between the rhetoric of *Nature* and sermon styles (19).² Readers as far back as Thomas Carlyle have noted apocalyptic aspects of *Nature*, and have related the essay to John's *Revelation*. Hodder's study is an extended musing on the remarks of Carlyle, O.W. Holmes, Joel Porte, R.A. Yoder, Sacvan Bercovitch, Barbara Packer, and Harold Bloom, all of whom place Emerson in the apocalyptic tradition.³

2. A New Revelation

Like *Revelation*, *Nature* is an "unveiling" of truths that were previously hidden or unknown. As M.H. Abrams reminds us in *Natural Supernaturalism*, in the Bible apocalypse "signifies a vision in which the old world is replaced by a

new and better world" (41). Porte equates Emerson's idea of apocalypse with Shelley's, as formulated by Abrams. For Porte, Emerson's "ruling figure," to borrow Abram's language, "for the advent of the renovated world is that of an instantaneous and radical alteration of sight: man's imaginative vision, suddenly liberated, penetrates to the inner forms, both of man and his world, which had been there all the time, beneath the veil" (qtd. Porte 72). Porte correctly illustrates that for Emerson apocalypse is "more earnest vision" that views surfaces of things so that they "become transparent" as "causes and spirits are seen through them" (CW 1:30). The model for Emerson's notion of apocalypse is John's *Revelation*, in which the saint sees "a new heaven and a new earth; for the first heaven and the first earth were passed away" (Rev. 21:1).

Taking a cue from Carlyle, who called Emerson's *Nature* a "True Apocalypse," Hodder develops the thesis that

Nature grows out of the Bible, recapitulates its structure, and participates in its vision. Like the Bible, *Nature* consists of a series of revelations and revisions culminating in a world- and word- rending apocalypse. Viewed traditionally, revelation is not what the Bible is about merely, or what it leads to--the Bible is Revelation from beginning to end. And this design is the one that Emerson found most essential to re-present in *Nature*.

(6)

This thesis correctly describes Emerson's relationship to the Bible, especially to *Revelation*. However, it lacks one important element: the scientific content of Emerson's vision. One of the flaws that Emerson found in Jesus, the archetypal

Christian prophet, was that he had "no love of natural science" (*JMN* 5:71-72).

Emerson believed with Goethe that the vision of organic form underlying all matter could be turned into a "prophetic vision" only by "slowpaced experiment" (*JMN* 5:220). When in the opening of *Nature*, Emerson declares that we should have "a religion by revelation to us," he means a vision of the causes of nature, which "stream around and through us" (*CW* 1:7). The content of Emerson's vision is the "instantaneous in-streaming causing power" (*CW* 1:43), the "causes and spirits" (*CW* 1:30) that generate nature.

Nature grows out of the Bible by echoing its structure and vision and revising both in the light of science. In his *Angel of Apocalypse*, Joseph Wittreich observes that *Revelation* "draws upon previous prophecy, inverting its patterns, correcting and amplifying its visions . . . Though a new prophecy, *Revelation* serves as a commentary on older ones; it invokes contexts that it interprets and projects a vision requiring interpretation similar to that which it provides for previous prophecy" (*Angel* 191). John "inverts whatever patterns he inherits from tradition" (*Blake's* 55). While John reverses the patterns of previous prophecy through overt allusion, Emerson, through covert, elliptical allusion echoes and revises the Bible, including *Revelation*.

Emerson's allusions to the Bible are revisionary in a transumptive sense. For Harold Bloom, transumption is the ultimate trope of revision, a strategy of allusion that gives the impression that the text alluded to is *anterior* to the alluding text. Transumption is "a total, final act of taking up a poetic stance in relation to anteriority of poetic language, which means primarily loved-and-feared poems of

the precursors. Properly accomplished, this stance figuratively produces the illusion of have fathered one's own fathers . . . " (*Poetry* 20). Bloom would associate Emerson's deployment of transumption with the sublime, which is for Bloom, as noted earlier, the poetic act of avoiding influence by repressing it and begetting oneself. The American Sublime can thus be described as a transumptive relationship "*intending to forget the father in order to present the son or daughter*" (244). Using the famous transparent eyeball passage as a proof text, Bloom shows how Emerson represses all influence by becoming "nothing," and yet through this negation is able to return to the primal, fathering force of "anteriority," the source of the creativity of all of his predecessors, by seeing "all" (247). In fashioning his own book of revelation, based on the truths of nature, Emerson gives the impression that his visions are somehow prior to John's, closer to the source of nature.

In revising the Judeo-Christian Bible, Emerson fashions his own sacred text. He writes that "We too must write Bibles, to unite again the heavens and the earthly world" (*W* 4:290). "One should make one's own Bible, by "hearkening to all those sentences which . . . thrill . . . like the sound of a trumpet" (*JMN* 5:476). The sound of the trumpet echoes the apocalypse in *Revelation*, signaled by angels blowing trumpets. For Emerson, the revelatory sentences of the Bible are not sufficiently powerful: "The Hebrew and Greek Scriptures contain immortal sentences, that have been the bread of life to millions. But they have no epical integrity; are fragmentary; are not shown in their order of the intellect. I look for the new Teacher that shall follow so far those shining laws that he shall see them

come full circle; shall see their rounding complete grace" (*CW* 1:92-3). Emerson fashions himself as this new teacher, whose sentences will reveal the shining laws that generate the universe.⁴

The sentences of Emerson's apocalypse will be drawn from the "book of Nature," containing the "Natural history of the woods," tying their "astronomy, botany, physiology, meteorology, picturesque, & poetry together" (*JMN* 5:25). As Hodder claims, both *Nature* and the Bible are not only about revelation, they *are* revelation. *Nature* is both about the unveiling of the energy that generates nature and is that unveiling. *Nature* is an apocalypse in both form and content. While John transcribes the book of God in heaven, Emerson transcribes nature's dynamic text. Austin Farrar's description of *Revelation* aptly illustrates one way the two texts correspond. *Revelation's* power derives from its symbols, which have "an astonishing multiplicity of reference . . . [and endeavour] to be that of which [they] speak, and imitate reality by multiplicity of [their] significance" (19). John and Emerson both know that "exact prose abstracts from reality, symbol presents it. And for that very reason, symbols have some of the many-sidedness of wild nature" (20). Both writers construct texts that are what they are about. While John's is about and is Christian revelation, Emerson's is about and is the unveiling of forces underlying nature.

Nature not only reveals nature's electric, cause; it *is* this cause by virtue of its charged sentences. It, like nature, is a polarized field of force. As noted earlier, several critics have commented on Emerson's volatile style, many focusing on *Nature*. In 1966, Richard Poirier located in *Nature* Emerson's representative

American style, a "drama of the search for clarity," "alive with the effort to stabilize certain feelings and attitudes that have . . . no place in the world" (*World* xxi). The style that expresses this "struggle" is "filled with an agitated desire to make a world in which tensions and polarities are fully developed and then resolved" (xxii). Later, in 1988, Poirier included *Nature* in a discussion of all Emerson's essays that work against reaching comfortable conclusions and/or conformity by using transitional, open-ended language, in "continuous acts of troping, syntactical shiftings, rhetorical fracturings . . ." (*Renewal* 33). Warner Berthoff has shown that Emerson's sentences in *Nature* are not descriptive or expository in ways prose is expected to be, but meaningful in their active projections and performances (191ff.) Barbara Packer detects "layers of purpose" in the essay similar to those in complex Old Testament narratives composed by several different stylists. She finds that *Nature* seems to be written by three different, conflicting figures: the "supernatural rationalist," the "antinomian," and the "redactor" (27). Hodder likewise exposes several conflicting voices in the essay, likening Emerson's style to the "voice of many waters" in the revelations of John and Jeremiah. He finds that Emerson interweaves several oratorical styles--dispositional, epideictic, hortatory, philosophic, propositional, pulpit, oracular, and wisdom (109-121, *passim*).

Each of these critics illuminates the primary stylistic feature of Emerson's first essay, its fluxional energy. However, none follows up on the hints that Emerson himself gave for the nature of his style: its attempt to be nature, a vector of its polarized charges, an apocalypse of its spirit. In the following analyses of

Nature, I demonstrate how Emerson merges science and religion into patterns modeled on the laws of nature, meant to attract and shock readers with electromagnetic force. These close readings fully reveal the sublime science--the dynamic synthesis of the aesthetic of the sublime, science, and poetry.

II. Emerson's Visionary Vectors

1. An Original Relation to the Universe

The opening paragraph of *Nature* is crammed with meaning, polarized. Within eleven tightly wound sentences, are numerous tropes and other rhetorical devices, no less than five echoes of the Bible, and statements about Emerson's relationship to nature and his poetics. This paragraph is the first of several sublime sites in *Nature*. Out of three of them, Emerson emerges as a revisionary prophet patterning and revealing the forces of nature. Here is the opening of the 1836 edition.

Our age is retrospective. It builds the sepulchres of the fathers. It writes biographies, histories, and criticism. The foregoing generations beheld God and nature face to face; we, through their eyes. Why should not we also enjoy an original relation to the universe? Why should not we have a poetry and philosophy of insight and not of tradition, and a religion by revelation to us, and not the history of theirs? Embosomed for a season in nature, whose floods of life stream around and through us, and invite us by the powers they supply, to action proportioned to nature, why should we grope among the dry bones of the past, or put the living generation into

the masquerade out of its faded wardrobe? The sun shines to-day also.

There is more wool and flax in the fields. There are new lands, new men, new thoughts. Let us demand our own works and laws and worship. (CW 1:7)

In one reading, the passage is foremost about building, which is by extension writing. In *A World Elsewhere*, Richard Poirier connects building with writing in his study of Emerson. Emerson himself writes that rhetoric is the "Building of Discourse," a "temple, soaring in due gradation, turret over tower to heaven, cheerful with thorough lights, majestic with strength desired of all eyes" (JMN 5:409). Elsewhere, he equates composition with "a foundation of a new superstructure" (JMN 5:198). The "maker of a sentence . . . launches out into the infinite & builds a road in Chaos and Old Night" (JMN 4:363). Indeed, Emerson ends *Nature* by admonishing his readers to "Build . . . [their] own world" just as nature builds its own, by altering, molding, and making the fluid world (CW 1:44-5). In this passage, Emerson's teaches readers how properly to trope: not by constructing stark terms that house the dead, but by fashioning fluid words that fit the flowing of nature.

Emerson's "retrospective age" looks backward to the past, and in doing so, builds certain kinds of texts. Emerson immediately tropes his "age," preparing to turn it to growth, infancy, the babe at the heart of nature embosomed. Activating the trope of prosopopoeia, Emerson personifies his age into a builder: "It builds the sepulchres of the fathers." This trope acts on the synecdoche of "sepulchres of the fathers," which stands for all celebrations of the dead, the past. "Sepulchres of

the fathers" echoes and revises *Luke* 11: 46-48. As Joel Porte has shown, Emerson often mimics the exordium of a sermon in his essays by alluding to Biblical texts in his opening paragraphs. Porte notes that Emerson alludes here to a passage in which Jesus chastises the Pharisees (75-77): "Woe unto you! for ye build the sepulchres of the prophets, and your fathers killed them. Truly ye bear witness that ye allow the deeds of your fathers: for they indeed killed them, ye build their sepulchres." While Porte draws attention to Emerson's indirect echoing of Jesus, he fails to consider the idea of building in this passage. Emerson not only fashions himself as a new Jesus in attacking his age for killing revelation, but he also links certain forms of building with blindness to revelation and with death. The next sentence explicates the sepulchres. The sepulchres the age builds are "biographies, histories, and criticism." The third sentence is a metaphor for the second. Writing is a metaphor for building; certain kinds of writing, for sepulchres.

In these first three sentences, Emerson has implicitly drawn contrasts: writing that celebrates or commemorates the past is blind to revelation and associated with static structures that house the dead; by implication, writing that celebrates the present and its prospects and will be visionary, dynamic, alive. The linguistic vigor we have so far seen in these sentences is itself an example of this revelatory writing. The sentences, far from static, urge activity in readers, bring them to life, teaching them how to make their own turns, tropes.

The next sentence elaborates these contrasts, as Emerson opposes immediately "beholding" God and nature face to face to viewing God and nature mediately through the eyes of the fathers: "The foregoing generations beheld God

face to face; we, through their eyes." "Behold" serves as a pun here; it not only means "to look upon," but also etymologically suggests "to hold, have, occupy, possess, guard or preserve," as well as "to belong," or "to signify." To behold something is not only to see it, but to participate in it actively and palpably and to represent it. The pun is an instance of synaesthesia, combining the faculties of sight and touch. These dimensions are further charged by the fact that Emerson again echoes, as Porte shows, the Bible. I *Corinthians* 13 states that "When I was a child, I spake as a child, I understood as a child, I thought as a child: but when I became a man, I put away childish things. For now we see through a glass, darkly: but then, face to face." Porte is correct to suggest that this echoing predicts one of the primary themes of the "Divinity School Address." Subverting the traditional Christian idea that full apprehension of the divinity will come at the end of time, in that address and in *Nature* Emerson claims that we can have a vision of God in the present. Porte here again fails to focus on the idea of building; a dark glass is a constructed form--like a sepulchre, history, biography, and criticism--that hinders direct revelation. Emerson as a seer and builder constructs texts that reveal the forces of nature, their workings and significance. His *Nature*, far from darkening spirit, is a conduit through which it flows.

Further, this echoing of *Corinthians* sets up another contrast; vision, life, and dynamism are associated with the child, with youth, while blindness, death, and stasis are related to the father, to age. As Emerson will write later in *Nature*, "In the woods . . . a man casts off his years . . . and . . . is always a child. In the woods, is perpetual youth" (CW 1:10). "Infancy is the perpetual Messiah" (CW 1

: 42). The adept, the one prepared for a vision of nature, is as an infant, without words, yet prepared, like Peter at the Pentecost, for the language of God. As noted earlier, Emerson later names the sublime a "terrible infant" (W 6:29). The sublime, like the forces of nature, is beyond words, yet teaches its beholder, after rendering him silent, how to speak poetically. As Emerson proclaims, "Always the seer is the sayer" (CW 1:84). One sees in silence, it seems, like a "transparent eyeball"; the vision, however, inspires, requires speech. The infant, ears free of the heavy words of the past, is a portal for the Muse. As in the parable of Nietzsche's Zarathustra, the infant is not burdened by the past like the camel, nor is it angry, in opposition, as the lion; it is free to hear and create (*Portable* 137-39). Emerson's sublime sentences work to render readers momentarily speechless as well, engaging their full attention with riddling words. This silence is a simmering before the boil, an upwelling of speech.

The following two sentences reinforce the dichotomies established in first four. "Why should not we also enjoy an original relation to the universe? Why should not we have a poetry and philosophy of insight and not of tradition, and a religion by revelation to us, and not the history of theirs?" Through a compression of the figures of anaphora and parallelism, as well of two rhetorical questions, Emerson heightens his rhetoric, preparing his readers for the ensuing celebration of nature's energy. These two sentences "rhyme" with and oppose the first two anaphoric, parallel sentences beginning with "It . . .". Those two sentences suggest static, dead building, while these two anaphoric parallel structures celebrate "insight" and an "original" relation to nature. "Original" further

reinforces the dynamism of nature, proper seeing, and proper building, as the word derives from the Latin *oriri*, which means to rise or spring.

Emerson's syntax here supports the passage's move from stillness to motion. The sentences leading up to the rhetorical questions share the syntactic pattern of "subject- verb-object," which reinforces the monotony and stagnation of "biographies, histories, and criticism." The rhetorical questions not only invert this pattern, but also engage readers to participate actively in the floods of life, as questions demand activity from readers. Further, the second rhetorical question dissolves the opening sentences. It and the sentence following (yet another rhetorical question) are both long, flowing, complex constructions, markedly in contrast to the short, stark, simple sentences that open the passage. The three questions literally pull readers away from stasis into active inquiry, loosening their minds into the floods of long, flowing sentences. Indeed, these sentences, this entire passage make readers *ec-static*, moving them out of stillness, shocking them out of habit.

The sentence beginning with "Embosomed" is the core of the passage. Not only does it continue the series of rhetorical questions but compresses several tropes and two allusions. "Embosomed for a season in nature, whose floods of life stream around and through us, inviting us by the powers they supply, to action proportioned to nature, why should we grope among the dry bones of the past, or put the living generation into masquerade out of its faded wardrobe?" The word "embosomed" opens into a series of semantic links. It metaphorically casts nature as a sheltering, maternal figure. Moreover, a bosom is often a metonymy for the

center of emotion, the heart. Thus far, through prosopopoeia, Emerson intimates that one way to relate to nature is as an infant relates to its mother. The relationship is generated by love and characterized by sheltering. Also, it requires, as noted above, silence on the part of the beholder, who waits for vision followed by words to speak it. However, "embosomed" also carries the connotation of "enwombed," as "bosom" derives from the Old English *bosm*, which means "womb" as well as "breast." "Season" further reinforces the imagery of birth, as "season," by way of the metonymy of time replacing its characteristics, suggests the rhythms of growth and decay in the cycle of the year. In this case, "season," operated on by the prosopopoeia of nature as womb, intimates time for birth and growing. The word derives from *serere*, to plant, further reinforcing the connotation of gestation.⁶

The next clause reinforces the idea that nature enwombs us, gives us birth. On one level, nature's "floods of life" is a metaphor for the mother's milk of the nature in which we are embosomed or an amniotic fluid nourishing us as we are enwombed in nature. However, the verb "stream" bursts the sheltering structure of the bosom or womb. The stationary, secure bosom or womb is troped into a vessel channeling the powerful flows of life. This complex metaphor compresses several paradoxical ideas: stillness and motion, safety and risk, stability and flux. The "we" or "us" in the sentence is troped from being a passive recipient of nature's nourishment to being an active participant in its energy. In sum, the "we" is charged with life, motion. The passage and the readers both come to life, floated away from the sepulchres of the dead toward the light of the sun. Living

vigorously like nature is a primary value for Emerson; he writes in "Self-Reliance," "Life only avails, not the having lived. Power ceases in the instant of repose; it resides in the moment of transition from a past to a new state, in the shooting of a gulf, the darting to an aim. This one fact the world hates, that the soul becomes; for that ever degrades the past, turns all riches to poverty, all reputation to shame, confounds the saint with the rogue, shoves Jesus and Judas equally aside" (*CW* 2:40). Readers wishing to avoid being drowned by the surge of significance must go with the flow.

This paradoxical interaction between motion and stillness suggests Emerson's view of the relationship between spirit and matter. He glosses this opening paragraph later in *Nature* when he writes, "spirit, that is, the Supreme Being, does not build up nature around us, but puts it forth through us, as the life of the tree puts forth new branches and leaves through the pores of the old. As a plant upon the earth, so man rests upon the bosom of God; he is nourished by unfailing fountains, and draws, at his need, inexhaustible power" (*CW* 1:38). The world itself proceeds from this same spirit, as spirit "alter, moulds, and makes" nature, rendering it "fluid" and "volatile" (*CW* 1:44). The "floods of life" then, are spirit, the force--be it electric or otherwise--that generates, shapes, and nourishes matter. Indeed, Emerson learned from Faraday that "water" is "explosive" (*TN* 278). "We," like all matter, are both stationary and moving, like plants, evolving, yet stationary patterns of the dynamic, "inexhaustible power" that makes it what it is. Matter, like Eliot's ideal work of art, "Moves perpetually in its stillness," is "Still and still moving." Emerson's metaphor expresses the relationship between

matter and energy that electromagnetism properly named. Things, discrete entities of matter, are energy, the rushing power of spirit. Each thing is both embosomed in its separate identity and part of the universal flow of energy that makes it what it is, is immanent in it. Here exemplified is Emerson's theory of polarity, intuited by *Naturphilosophen*, proved by Faraday.

Hodder notes that "floods of life" echoes *Isaiah 44:3*, in which God says to the Israelites "For I will pour water upon him that is thirsty, and floods upon the dry ground: I will pour my spirit upon thy seed, and my blessing upon thine offspring" (28). Hodder goes on to assert that Emerson's use of "floods" rehearses imagery connected with the Kingdom of God that appears throughout the Bible. In equating God with nature, whose water flows through us, Emerson is again revising the Bible. God is not so much a savior and provider for a chosen people in the Old Testament, but the force of life immanent in the universe that the scientist can reveal as well as the mystic.

After this clause, Emerson asks the third rhetorical question that reinforces the opposition between life and death. When we can partake of the energy of nature, why should we grope among the "dry bones of the past"? "Dry bones" is not only a metonymy for the sepulchres of the fathers, contrasted to the "floods of life," but echoes and revises the Bible. Hodder observes that the "dry bones" refer to *Ezekiel 37:1-6*. In that prophetic book, God leads Ezekiel to a valley of dry bones, where he tells the prophet, "Prophesy upon these bones, and say unto them, O ye dry bones, hear the word of the Lord. Thus saith the Lord God unto these bones; Behold, I will cause breath to enter into you, and ye shall live. And I will

lay sinew upon you, and will bring up flesh upon you, and cover you with skin, and put breath in you, and ye shall live; and ye shall know that I am the Lord" (*Ez.* 37-4-6). As Ezekiel speaks these words, the bones come to life; they are covered with flesh and animated with breath, or spirit. God then has Ezekiel tell the newly living host, which is the resuscitated House of Israel, that God will raise the children of Israel (who are in exile in Babylonia) from their graves and put his spirit into them.

In echoing this moment in the prophetic tradition, Emerson relates his text to Ezekiel's in complex, provocative ways. Most obviously, he separates himself from Ezekiel; unlike the Hebrew prophet, he will not grope among bones laboring to revive the dead. Emerson's *topos* will not be valleys of death and decay, but the present moment in nature, "whose floods of life stream around and through us." But Emerson's relationship to Ezekiel is not one of simple contrast. Emerson fashions himself as a new Ezekiel who revises his predecessor. Where Ezekiel's words create tissues--texts--for bones, Emerson's words must be proportioned to fit the flowing, living nature; instead of reviving the dead, his words will reveal life. His words must create dynamic patterns that present the unrepresentable force of nature. Emerson revises the Hebrew prophet of Scripture by constructing himself as a naturalist prophet of the living.

When Emerson questions why the "living generation" should be put in a "masquerade out of its faded wardrobe," he again metaphorizes the sepulchres of the fathers, already a synecdoche, and also echoes the Bible again. In choosing the word "wardrobes," garments, in connection with revelation, Emerson alludes to

the many mentions of "garment" in *Revelation*. Of course, Emerson's faded wardrobes of a masquerade (which derives from a word meaning "buffoon") are directly opposed to the white garments of the righteous chosen to dwell with God in the New Jerusalem. Of the several appearances of white garments in *Revelation*, the mention of them at 7:13-14 is the most important in connection with Emerson. In this passage, God's chosen, whose garments have been washed and made white in the blood of the Lamb, are praised in a brief interlude between the opening of the sixth and seventh seals of the great scroll that reveals the apocalypse, the unveiling of God's final truth. Those who are washed in Jesus's blood stand at the hand of God ready to witness the opening of the seventh seal, at which time the apocalypse begins. Those in faded masquerade, involved with the texts of the past, will experience no such revelation, but are hindered from visions.

However, those wearing the white linens woven from the "wool" and "flax" in the fields "today" are prepared for immediate apocalypse. Emerson's claim that "There is more wool and flax in the fields today" suggests that those who embrace nature in the present will experience revelation. Indeed, "wool and flax" are used in the Bible to signal revelation of God. As Hodder remarks, "wool and flax" appears several places in the Bible, most notably in *Proverbs* 31:13, where it is connected to a virtuous wife: "She seeketh wool, and flax, and worketh willingly with her hands" (28). Hodder goes on to note that "wool and flax" is connected with a "cluster" of images throughout the Bible associated with marriage. In *Proverbs* and *Hosea* it is used twice (2:5 and 2:9) in connection to marriage. In both cases, "wool and flax" stand for clothing "which signifies the fullness of

God's grace and betokens his constancy" (30). More importantly, white garments appear in connection with marriage in *Revelation*, where the Lamb prepares to marry New Jerusalem, his bride who is "arrayed in fine linen, clean and white" (19: 8).⁶ As M.H. Abrams observes, marriage is one of the two primary images in the Bible associated with apocalypse (*Natural* 41-46).

Again, Emerson's relation to these Biblical passages concerned with white garments is revisionary. Emerson revises these Biblical textiles, the garments of the blessed, by suggesting that we do not wait to be clothed by God on Judgement Day, but that we weave our own garments in the present, preparing for revelation. These new, white garments woven from fresh wool and flax symbolize immediate apocalypse that flashes forth not because the garments are washed in the blood of Jesus, but because they are cleansed in the floods of nature. Those washed in the floods of nature will be granted immediate revelation of nature's causes; just as the sun shines today, so the possibility of apocalyptic vision is afoot. Wool and flax are not only the raw material for apocalyptic textiles, as it were, but also metaphorically, the stuff of texts, of books. "Textile" and "text" both derive from the Latin *texere*, to weave or to construct. Emerson intimates that we not only prepare for revelation today, but also that we weave our own texts to pattern, to figure, this revelation. Instead of building sepulchres of the fathers, we should weave new texts to fit the flowing of nature, to pattern the energy of the sun that "shines to-day also." Indeed, speaking a vision is clothing it; later in *Nature*, Emerson writes that inspired thought spontaneously "clothes" itself in imagery (*CW* 1:20), figuring forth the original cause.

Emerson's apocalyptic theme is reinforced by echoes of the new world in *Revelation*. In *Revelation* 21:1, the second main image of apocalypse, following Abrams, appears: the new heaven and the new earth (*Natural* 41-42). John writes "And I saw a new heaven and a new earth: for the first heaven and the first earth were passed away." Likewise, for Emerson there are "new lands, new men, new thoughts." Again, Emerson revises the Bible; instead of offering a future vision of a heavenly city, Emerson asserts that the new heaven and earth are already here, if we can see them. For Emerson, if we scientifically observe nature with a religious impulse, then we will see the causes of nature clearly: "[One] cannot be a naturalist, until he satisfies all the demands of spirit. Love is as much its demand, as perception. Indeed, neither can be perfect without the other. In the uttermost meaning of the words, thought is devout, and devotion is thought" (*CW* 1:43).⁷ When we love nature properly, "the axis of vision" is "coincident with the axis of things" things appear "transparent," not "opaque" (*CW* 1:43).⁸ Then we can see the sun; then the world is new.

The anaphora and parallelism in "There is more wool and flax . . ." and "There are new lands . . ." rhyme with the similar figures of speech in the two sentences beginning with "It builds . . ." and "It writes . . ." and the two beginning with "Why should . . .". The final instance of these figures of speech returns the passage to balance. The first set occurs in a static syntactic pattern denoting death and stillness; the second set is dynamic, its syntax embodying life and flux; the final set is presented in a pattern of "expletive-copula-subject," which returns the

passage to stability after the loose constructions of the second set. While the third set echoes the stable patterns of the first set, it does not return the passage to stasis. Not only do the sentences semantically praise the burgeoning life of nature in the present, but the second sentence of the set is cast in the figure of asyndeton. the conjunctions between the series of clauses "new lands, new men, new thoughts" omitted. Asyndeton produces "a hurried rhythm in [a] sentence," appropriate for stirring the emotions at the end of a discourse (Corbett 435). Though Emerson constructs stable, simple patterns to end his opening, they are energetic, nonetheless: matter is energy. The final sentence appropriately counters asyndeton with polysyndeton, "works and laws and worship." Polysyndeton slows the rhythm of prose, placing special emphasis on each word separated by the conjunctions. Emerson thus highlights the need for us to build our own worlds, our own works, laws, and worship.

Paronomasia and other sound effects likewise are activated to support these semantic and syntactic senses. Emerson deploys sounds that reinforce the passage's central opposition between "insight" and "tradition." "Tradition," a polysyllabic word of Latin origin, is aurally linked to other polysyllabic terms deriving from Greek and Latin. For example, the initial sentences metaphorically describing the traditions that hinder insight contain five words of this sort: "Our age is retrospective. It builds the sepulchres of the fathers. It writes histories, biographies, and criticism." The polysyllabic words "retrospective," "sepulchres," "histories," "biographies," and "criticism" each derives from Latin or Greek. These "ornate" words are contrasted to those associated with "insight," a word of

Anglo-Saxon origin, apt for suggesting the possibility of revelation in the present, on American soil, and the impossibility of experiencing vision by studying the Greek and Latin traditions. One gains insight by sensing the "floods" of "life," Anglo-Saxon monosyllables; these floods reveal that "There is more wool and flax in the fields. There are new lands, new men, new thoughts. Let us demand our own works and laws and worship." "Wool," "flax," "lands," "men," "thoughts," "works," and "laws" are all monosyllables of Anglo origin, as is the disyllable "worship." These sounds oppose simple and the concrete to the complexity and abstractness of the Latin/Greek words.

Moreover, Emerson in this passage establishes subtle connections between consonants to reinforce relationships between "insight," "floods of life," and the possibility of great works in the present. Midway through the passage, Emerson asks why we can't have "a poetry and philosophy of insight and not of tradition . . . ?" This sentence is followed by a description of our immersion in nature, the region of revelation, in the present. "Embosomed for a season in nature, whose floods of life stream around an through us, and invite us to the powers they supply, to action proportioned to nature, why should we grope among the dry bones of the past, or put the living generation into the masquerade out of its faded wardrobe? The sun shines to-day also." He then ends the passage with the above-quoted cluster of Anglicized sentences beginning with "There is more wool and flax" and ending with "works and laws and worship." We hear the "n" of "insight" echoed throughout the passage in "*in*" "*nature*," "*invite*" "*nature*." "Insight" is indeed related to being "*in*" "*nature*," "*invited*" by her powers. "N" sounds continue in

the closing, where Emerson calls us to act on our experience of nature by celebrating "*new lands, new men, new thoughts.*" Moreover, "s" sounds occur throughout as well, not only reinforcing "sight," but also making the passage hiss with with life, breath. We hear these sounds in "Embosomed," "season," "floods," "stream," "us," "us," "powers," "supply," "sun." Again, these words on a semantic level clearly mesh with "sight," revelation, in the present, as our immersion in nature today, in the sun, gives us a vision of her powers. Finally, Emerson recalls the "floods" responsible for the power of nature in the sentence "There is more wool and flax in the fields." These "f" sounds echo back to a moment earlier in the passage in which Emerson praises the "foregoing" generations who beheld God "*face to face.*" "F," "n," and "s" sounds, then, support the oppositions between blindness and insight already established by antinomies between Latin/Greek polysyllables and Anglo-Saxon monosyllables.

The sequence has given readers edification on how to build their world. It has taught them not only that their tropes should be as volatile as nature, but that their *materia poetica* is not the past, but the present. They must compose in the light of the sun, not the torches of tradition. The rhetoric of the passage is Pentecostal, inspiring glossolalia in those readers who move with its flow. Its poetics is apocalyptic, as its tropes, as well as the sort of tropes it prescribes, gesture toward the sublime, the spirit animating matter. It is a knot, a pattern through which meanings rush. As such, it is a prologue to the form and content of at least two other visionary moments in *Nature*. These three passages not only echo visionary moments from the Bible, but also condense a maximum of semantic

and syntactic significance.

2. A Transparent Eye-ball

Harold Bloom ambiguously hails the famous "transparent eyeball" passage as the "most notorious" in Emerson's work (*Agon* 157). Certainly this passage has drawn more attention than any other in Emerson's *oeuvre*. Jonathan Bishop claims that it is the core of the essay, a microcosm of "everything Emerson publicly said thereafter" (15). This passage was caricatured by Emerson's Transcendentalist friend Christopher Pearse Cranch (Sealts and Ferguson 9); parts of it were disparaged by one of his most celebratory critics, Bishop himself, as "innocently absurd at best" (15); Bloom calls it "extraordinary," an instance of the sublime (*Agon* 158); and Poirier deems it an "evidence of Emerson's metaphoric power exerting itself to authenticate an incredible moment of self-transformation" (*World* 66). The passage epitomizes Emerson's compressed, polysemantic style, crowding together numerous tropes and allusions to the Bible, fully embodying the traits Burroughs finds in Emerson's best writing: "It is abrupt, freaky, unexpected . . . darts this way and that, and connects the far and the near in every line . . . [I]t is a leaping thread of light" (192).

For Bloom, this extraordinary passage is "the mode of negation through which the knower again could stand in the Abyss, the place of original fullness, before the Creation" (*Agon* 158). The image of the transparent eyeball emblemizes, Bloom argues, Emerson's attempt to avoid influence by returning to the primal waters, the void of *Genesis*, before God created the earth. Indeed, the

passage is Emerson's most visionary, when he blends with the energy of God to command a full view of the processes of nature. The 1836 edition reads:

Crossing a bare common, in snow puddles, at twilight , under a clouded sky, without having in my thoughts any occurrence of special good fortune, I have enjoyed a perfect exhilaration. Almost I fear to think how glad I am. In the woods, too, a man casts off his years, as the snake his slough, and at what period soever of life is always a child. In the woods, is perpetual youth. Within these plantations of God, a decorum and a sanctity reign, a perennial festival is dressed, and the guest sees not how he should tire of them in a thousand years. In the woods, we return to reason and faith. There I feel that nothing can befall me in life,--no disgrace, no calamity, (leaving me my eyes,) which nature cannot repair. Standing on the bare ground,--my head bathed by the blithe air, and uplifted into infinite space,--all mean egotism vanishes. I become a transparent eye-ball. I am nothing. I see all. The currents of the Universal Being circulate through me; I am part or particle of God. (CW 1:10)

Barbara Packer has rightly observed that in *Nature* the mind's alienation from nature is caused by "an error in vision" (72). When the "axis of vision" is "coincident" with the "axis of things," the world is transparent and one sees the cause, the spirit, the force, generating matter. This passage details such a moment: Emerson's speaker sees through the opacity of matter to the currents of universal being, becoming transparent himself. Kenneth Burke has used this passage to exemplify Emerson's mode of crossing from matter to spirit, transcending the

natural to the supernatural (157-58). Indeed, the passage is liminal, as it crosses boundaries, moves from matter to the cause that generates and emanates through it, the primal energy present in the first abyss out of which God created the world.

"Crossing a bare common" immediately alerts us to the threshold quality of the passage. "Crossing," first of all, is a pun. Not only is the "Visionary" (the character in the essay, as distinguished from the historical Emerson) literally moving from one place to another, but he is also at a crossroads, a *crux*. "Cross," deriving from the Latin *crux*, means not only a physical cross but a fateful juncture. Among Christians, "crossing" (making a cross sign in the air) is an act of blessing. Jesus died on the cross and so bearing a cross metaphorically suggests the proper Christian life (*Matt.* 10:38). Thus "crossing" indicates an act of great import involving the sacred. The Visionary echoes and revises the Christian act of "crossing" and "bearing a cross," as he blesses nature in winter, not the altar of a church in spring. He is not burdened by life in an imperfect, fallen world, but enjoys instead "perfect exhilaration." Moreover, his act of crossing does not acknowledge the Judeo-Christian God, but moves across a threshold toward an idea of a God who circulates through nature as Universal Being. Emerson does not deny this world to find a greater one, as Jesus teaches, but affirms this world because there is nothing else we can know.

Moreover, "crossing" denotes a chiasmus, "placing crosswise" in Greek. A chiasmus is "any structure in which elements are repeated in reverse, so giving the pattern ABBA" (*New Princeton*). Emerson's allusions in these sublime passages are chiasmi. He repeats the Bible in alluding to it while he reverses its meaning in

revising it to fit his intuitions of nature. Likewise, his pun on "crossing" is a chiasmus. As Philip Kuberski suggests in his study of Joyce, puns are sometimes instances of chiasmus in that they are sites where opposing meanings "cross" (71-72). "Crossing" intersects a spiritual act and symbol in Christianity with the act of making way toward a vision in nature. Several other puns throughout this passage also embody this chiasmic structure. Indeed, the entire structure of *Nature* could be characterized as chiasmic, as Emerson throughout the essay crosses nature and scripture, words and things, mind and matter.

The entire first sentence figuratively reinforces liminality. As he crosses the common, the universal threshold between matter and the spirit of Universal Being, the Visionary registers several transitional events. He walks through "snow puddles," a synecdoche for the state of both the speaker and nature. Like the Visionary--who is between fear and gladness, adulthood and childhood--and like the natural environment--which is in "twilight," and covered with a "clouded sky," a sky in a transitional state between gas and liquid--the snow puddles are also liminal. ice on the verge of becoming water. This synecdoche is a complex trope, as it yokes together water and ice, fluidity and stasis. As readers move through several elided terms, like "ice" and "water," they are not only moved to more remote images of solidity and liquidity, but also prepared for the Visionary's impending transition from solid to liquid, as it were, when he is transformed from a person to a conduit through which Being flows. "Twilight" and "clouded sky" can also as tropes; they are versions of the synecdochal "snow puddles," parts standing for an entire liminal scene. Twilight is not only the liminal point between

day and night, dark and light, but also metaphorically signals a move from the life of the sun to the moon's deathly glow, anticipating the Visionary's annihilation, into "nothing." "Twilight" also establishes an irony that pervades the remainder of the passage: in dim light, the Visionary "sees" all. Clouds are, again, both gas and liquid, moving toward liquid, but they also suggest "gloom," reinforcing the irony of this ecstatic passage that celebrates transparency. The first sentence, then, institutes the structure of the passage, not only by delineating the poles between which the Visionary moves and establishing chiasmic reversals of scripture and nature, but also by setting a rhetorical precedent that will reach a vertiginous pitch at the core of the passage.

Other echoes further charge Emerson's language. He revises the Biblical notion of innocence in comparing the return to innocence to a snake casting off its slough. "In the woods, a man casts off his years, as the snake his slough, and at what period soever of life is always a child." In *Genesis* 3:1, the serpent is associated with subtlety and is the cause of the fall of man from innocence to experience, from perfection to imperfection. Emerson reverses the Biblical imagery; the snake is part of nature and therefore innocent. Indeed, the sentence relates the snake, a traditional symbol of evil, and the child, often equated with innocence and knowledge of God in the Gospels (esp. *Matt.* 19:13-14). To eat from the tree of knowledge is to understand Being, not to offend God. Emerson writes in a journal entry in 1840, "I dreamed that I floated at will in the great Ether, and I saw this world floating also not far off, but diminished to the size of an apple. Then the angel took it in his hand & brought it to me and said

'This must thou eat.' And I ate the world" (*JMN* 7:525). Among the many readings of this provocative dream, one is that Emerson revises *Genesis* in light of his celebration of nature, not scripture, as the locus for revelation. Emerson's Visionary would eat from the tree of knowledge of good and evil and report his findings. Indeed, Ralph LaRosa and Joel Porte have both suggested there is a parallel in Emerson between eating and prophecy (LaRosa 29; Porte 80-81). In *Revelation* 10:8-11, John is told by a voice from heaven to take a scroll from an angel and eat it: "And I took the little scroll from the hand of the angel and ate it; it was sweet as honey in my mouth, but when I had eaten it my stomach was bitter. And I was told, 'You must again prophesy about many peoples and nations and tongues and kings.'" This passage alludes to a similar scene in *Ezekiel* where that prophet must also eat the words of God. Emerson transumes these moments from *Ezekiel* and *Revelation* in claiming that the prophet is the scientist whose message is not bitter but joyous. For this prophet, knowledge does not lead to suffering or imperfection, but to perfection, power, vision. Indeed, the world is not fallen out of grace, but the site of grace, redemption. "Nothing" can "befal" the speaker, no "disgrace," that nature itself cannot "repair," or redeem.

Emerson reinforces this idea through the figure of anaphora, as two other sentences beginning with "In the woods" emphasize sacred nature. In the three phrases beginning with "In the woods," he suggests that nature is a site not only of innocence and youth, but also of "reason," or knowledge, and "faith," or religion. Again, the semantic aspect of Emerson's rhetoric is strengthened by his syntax. Anaphora, Longinus notes, advances sublimity by "striking the mind" of the

reader, "by the swift succession of blow on blow." Like a series of gusts of wind or electrical charges, anaphora, working in conjunction with other figures, stirs "the blood," continually assailing the auditor (101). Emerson, then, hammers his point home: "In the woods, . . . a man . . . is a child," "In the woods, is perpetual youth," "In the woods, we return to reason and faith." Though humans have been cast from the garden of Eden into the forest, they retain their innocence, knowledge, faith. The syntactic rhymes of anaphora not only reinforce this idea through repetition, but signal an intensified praise of nature. The second element of the anaphora designates the woods as a region not merely of childhood, but for "perpetual," or eternal youth. The third element announces that the woods are not only a place of eternal innocence, but also of knowledge and faith. This increased energy in praising the woods structurally mimics the gusts of wind that signal a coming storm. Just as each gust leading to a storm is stronger than the last, until finally the sky explodes, so these repeated prepositional phrases signal an increase in verbal energy that will break into a rhetorical storm in the "transparent eye-ball" sentence, which gathers each element of the anaphora into unity as the Visionary becomes one with God, in perfect innocence, faith, and knowledge. Both the Visionary and the readers are placed in tension as they experience the gathering of these forces, anticipating a flash of lightning, natural electricity.

Emerson structurally mimics his upsetting of traditional Christianity and prepares readers for the Visionary's becoming "nothing" and seeing "all" by employing the figure of hyperbaton, inverting normal syntax. In "Almost I fear to think how glad I am," Emerson transposes the normal pattern of "I almost fear . . .

." This reversal not only highlights the word "almost," thus reinforcing the fact that the Visionary is at a threshold, but also corresponds to Emerson's reversals of darkness and light, imperfection and perfection, nothing and all. A second hyperbaton occurring in the phrase "at what period soever of life," which reverses the normal order of "at whatsoever period of life," further underpins these transpositions.

This great confidence in the grace of nature is questioned, however, in the parenthetical "leaving me my eyes." Emerson writes that ". . . nothing can befall me in life,--no disgrace, no calamity (leaving me my eyes,) which nature cannot repair." The Visionary feels that nature can mend any disgrace or calamity as long as he has eyes. This aside reinforces the physical nature of vision in the passage. Unlike John, whose vision struck the inner eye of dream, this Visionary's revelation is dependent on physical sight. Yet, another reading of the parenthesis undercuts the necessity of physical sight. "Leaving me my eyes" could indeed be a calamity that nature can repair. The disgrace or calamity could well be "my eyes" "leaving me," the loss of sight. In this case, nature could repair this problem, exhilarating even the blind man.

This parenthetical aside is another example of chiasmus, crossing both the necessity and superfluity of sight. As such, it is a proleptic version of the core of the passage in which the Visionary becomes the transparent eyeball, a site that crosses nothing and all, full sight and the annihilation of self. This paradox points to a Blakean act of seeing, in which the Visionary sees not with the eye, but *through* it. Physical sight is necessary for closely observing nature, as the

Visionary does, cataloging the details of the scene in minute detail, noticing the landscape, the weather, the time. This close observation leads to an insight of the invisible energy generating and animating the visible, an insight that makes sight superfluous. Insight is the goal of sight; sight, the catalyst of insight. Inductive observation leads to vision. Emerson blends Francis Bacon and St. John.

Emerson supports these ideas by again echoing and revising *Revelation*. In nature, a "perennial festival is dressed." This festival revises the marriage festival for the Lamb and New Jerusalem in *Revelation* 19:9: "And he said unto me, Write, Blessed are they which are called unto the marriage supper of the Lamb." This festival, Abrams observes, symbolizes the marriage between God and man in heaven after the world ending apocalypse (*Natural* 42-43). For Emerson, the marriage festival of God and man takes place not in heaven in the future, but in nature in the present.

The eye of the passage, its most shocking moment, begins with the participial phrase "Standing on the bare ground" The phrase conceptually and syntactically rhymes with the liminal opening phrase of the passage, "Crossing a bare common," signaling the Visionary's move from the liminal into the world of Universal Being, the sublime. Between the time the Visionary crosses the common and finds himself standing on bare ground, he, like Dante's Pilgrim, has crossed Lethe and Eunoe and entered into earthly paradise, the realm where one is prepared for a vision of the absolute. The "bare ground" is yet another in a series of puns: it is literally the winter earth, but also the absolute foundation, the basis underlying everything. Emerson has troped the "bare common" into the site where

the universal principle of life will emerge in a sublime moment. Moreover, "ground" is a primary term used in speaking of electricity. A ground is a large conducting body, like the earth, whose potential or voltage is zero. "Ground" also refers to an electric circuit connected to the earth and thus grounded, or rendered impotent. The ground, like the Visionary, is still, empty, waiting to be filled and charged by Being. This pun, then, contained in a participial phrase, will modify its potential subject by metaphorically "grounding" it, emptying it of voltage.

But Emerson appears to provide no subject. We would expect "Standing on the bare ground" to modify "I," the Visionary, not "egotism." It seems as if the Visionary has disappeared. Indeed, Bloom has rightly called this passage a "triumph of the Negative Way" (*Agon* 159), as the Visionary empties himself of selfhood to become one with the primal Abyss. The "I" in the opening sentence of the passage is lost, as Emerson uses the figure of anacoluthon, a mode of expression in which the writer or speaker changes constructions mid-sentence, thus leaving its beginning uncompleted. Quite simply, it seems that Emerson employs a dangling modifier. This suggests that the speaker has lost his particularity to become one with the universal principle. The Visionary has faded into the "ground," his energy merging with the earth's, both circuits empty of energy.

Alternatively, one could read that "Standing on the bare ground" modifies "head." "Standing on bare ground,--my head bathed in the blithe air, and uplifted into infinite space,--all mean egotism vanishes." This would do away with anacoluthon and present a catachretic metaphor, in which a head "stands." This

interpretation holds as well. "Head" is a dense site, compressing metonymy, synecdoche, and metaphor. "Head" is a metonymy for "mind." It is also a whole substituted for the part of the eye, as the head will be metaphorized into an eye in the next sentence. Still yet, if "head" is interpreted as the subject of the sentence, then it is metaphorized into a circuit grounded in the earth. Emerson's grammar is in conflict with itself. The readers are caught between several possibilities, each of which is equally valid. Like the Visionary, readers are placed in a liminal state, on the verge of transcendence, at the brink of creation.

At this juncture, both the Visionary and readers find themselves anxious, throbbing between gladness and fear. The Visionary is about to cross a threshold between what Angus Fletcher calls labyrinth and temple, the terms representing the dialectic between "sacred stillness" and "profane movement"; the transition between these antinomies is epitomized by "Homer's Cave of the Nymphs, Vergil's twin Gates of Horn and Ivory, Dante's Limbo" ("Positive" 135). The Visionary is "in between," edging toward union with the sacred force of God. He will not reach mere "stillness" in the temple. Instead, he, as part or particle of a circulating God, will become an intersection of stillness--the stationary pattern of the "eye-ball"--and motion--the currents of the God. The Visionary is a synthesis of the temple and labyrinth in his sublime moment, a chiasmus of spirit and matter, time and eternity: the labyrinth of the woods is the temple of God.

Attentive readers are tense as well. The indeterminacy caused by the slippages in language makes them anxious, while the richness of signification leads to joy. In a labyrinth of words while interpreting the complex sentence

beginning with "Standing on bare ground," readers in the next sentence will see conflicting meanings suddenly undulate in a harmony of Universal Being--"I become a transparent eye-ball. I am nothing. I see all. The currents of the Universal Being circulate through me; I am part or particle of God." This sentence, like the Being it describes, gathers, as the *logos* of Heraclitus, many into one, strife into unity. As this semantic transformation occurs, as the tensions in meaning are released, readers, like the Visionary, experience the labyrinth transfigured into the temple, the aesthetic moment when contraries are gathered into a dynamic synthesis.

An echo of Jesus's baptism in *Matthew* 3:16-17 in the phrase "bathed in the blithe air, and uplifted into infinite space" confirms that the Visionary and the readers are on the brink of transformation. The Biblical passage describes John's baptism of Jesus. "And Jesus, when he was baptized, went up straightaway out of the water: and, lo, the heavens were opened unto him, and he saw the Spirit of God descending like a dove, and lighting upon him: And lo a voice from heaven, saying, This is my beloved Son, in whom I am well pleased." Like Jesus, Emerson's Visionary is bathed in the joyous air, which is troped into "the currents of Universal Being" in the next sentence, suggesting water, air, and electricity. Like Jesus, the Visionary looks to the heavens as he is "uplifted into infinite space." In the next sentences, he is "blessed" by God, becoming "part or particle" of Him, losing his self, seeing all. The Visionary is a new Jesus, blessed by the forces of the universe, ready to proclaim the revelation of nature.

"Bathed in the blithe air," which will become a "current" of God, suggests

not only baptism, but also the Christian Pentecost. In *Acts* 2: 1-4, on the day of the Jewish Pentecost, the Holy Ghost rushes from the heavens in the form of a mighty wind, filling the followers of Jesus with spirit, turning their tongues to fire, making them speak other languages. Their ecstatic speech is not drunkenness, Peter claims, but a consummation of God's power and glory that was forecast by the prophet Joel (2: 14-21). Emerson's Visionary undergoes his own Pentecost, being filled with the wind of the spirit, describing his vision in ecstatic speech. Indeed, Nature's sublime moments resemble the glossolalia of Jesus's early followers. Like their ecstatic speech, Emerson's intoxicated language reveals the force of God in nature.

This transformation, simultaneously baptismal and Pentecostal, takes place in the next sentence, the "transparent eye-ball." The sentence echoes and revises several revelatory scenes in the Bible, as Emerson tropes his Visionary into a figure of pure vision energized by spirit. "Eye" is associated with the true sight of God's revelation, as it is when Job proclaims his intimate knowledge of God after he sees Him in the whirlwind: "I have heard of thee by the hearing of the ear; but now mine eye seeth thee" (42:5). Moreover, in *Proverbs*, the eye is linked to blessedness and generosity: "He that hath a bountiful eye shall be blessed; for he giveth his bread to the poor" (22:9). Emerson's revisions of *Genesis* are further apparent in this sentence as well. When Adam and Eve eat from the tree of knowledge of good and evil, "the eyes of them were both opened" (3:7). While in *Genesis* knowledge and sight are related to imperfection and despair, the sight of Emerson's Visionary is one with perfection and joy. Perhaps the

passage most directly connected to Emerson's sentence are Jesus's words in *Matthew* 6:22: "The light of the body is the eye: if therefore thine eye be single, thy whole body shall be full of light." Emerson literalizes this passage, troping his speaker's body into a single eye so full of light that it (ironically) sees all in the twilight. Still another passage that faintly reverberates when we hear "transparent" is *Revelation* 21:21, the only place where the word "transparent" appears in the King James Bible. The street of the heavenly city is "pure gold, as it were transparent glass." Likewise, in the sublime moment for Emerson, when the axis of vision is coincident with the axis of things, the world is transparent (*CW* 1:43), "causes and spirits are seen through [things]" (*CW* 1:30). During this revelation of nature's cause, both the beholder and nature become transparent: the Visionary sees through things because he is part of the energy generating them.

The sentence is epiphanic not only for the Visionary as it describes his move from the liminal to the sublime, but also for readers as it resolves semantic and syntactic indeterminacy into an aesthetic whole. The sentence is a warp onto which are woven three separate threads of imagery. The liminal tropes are now sublimed, as the Visionary has ironically moved from twilight to pure light, from crossing the threshold to the shore of vision, from the world of matter to spirit. The baptismal tropes are woven into the text as well; the Visionary has been transformed by the spirit into a condition of perfect knowledge of and oneness with God. Further, the tropes suggesting electricity have been transformed. The "grounded," impotent Visionary has now become an open circuit through which the powerful charges of the universal being will flow. As Emerson later writes, in

composing the writer is "the conductor of a whole river of electricity" (CW 3: 23). Here, the Visionary, ideal seer and sayer, is truly a conduit for the force of life. For a moment, all the disparate currents of the cosmos and of words in conflict are harmonized as they are concentrated in the point of the Visionary's eye.

Kenneth Burke has elaborated on Emerson's word play on "eye," "I" and the affirmative "aye." The sentence sets off a series of paranomastic puns, where for every "I," "eye" or "aye" can be substituted. "Transparent eyeball," like "head" earlier, also is a dense sites of three overlapping tropes. It could be a synecdoche of part for whole, if the eyeball stands for the head, the perceiving mind. Likewise, it is perhaps a metonymy, in which cause is substituted for effect, if the instrument of vision, the eye, stands for the moment of vision. Further, it is, of course, catachresis: to visualize a man as an eyeball strains the faculties. Likewise, the figures of irony, hyperbole, and oxymoron are condensed in the "eyeball," as it is ironic to see all at twilight, hyperbolic for a man to turn into an eye, and oxymoronic to be nothing while seeing all. Emerson also utilizes the figure of asyndeton, the omission of conjunctions between a series of clauses. He provides no conjunctions between "I become a transparent eyeball. I am nothing. I see all." This figure renders the effect of "a hurried rhythm in [a] sentence," appropriate for stirring the emotions at the end of a discourse" (Corbett 433). Longinus includes asyndeton in a list of figures that loosen the links that stifle the energy of language, emitting energy and passion at great speed (101). The Visionary is ecstatic, speaking in structures to move readers out of stillness as

well.

Paronomasia is employed to support semantic and syntactic meanings. The core of the passage is worth quoting again. "Standing on the bare ground,--my head bathed by the blithe air, and uplifted into infinite space,--all mean egotism vanishes. I become a transparent eyeball. I am nothing. I see all. The currents of Universal Being circulate through me; I am part or particle of God" (CW 1:10). Appropriately the primary recurring sounds are "b" and "i" sounds, as the passage is about Emerson's "I" and "eye" becoming one with "Being." "Bathed" and "blithe" alliterate with "bare," but also support each other's connotations. "Bathed" connotes baptism, and is thus connected with the blitheness of conversion, of becoming one with the unifying force. "Blithe" contains the long "i" sound that echoes "eye" and "I." The "I" is blithe. Moreover, it is "uplifted" into the "infinite." Both of these words contain short and long "i" sounds, reinforcing the echoes. This is the sentence in which the "I" falls out as egotism vanishes. Emerson has spread the "I" throughout this sentence, mixing it with the "b." This mixing prepares us for and reinforces the ultimate union with the "I/eye" and "being." The next sentence supports this mixing with further "b" and long "i" sounds in "I," "become," and in the all important union of the two in "eye-ball," which translates to "I-being" when we remember that the "eye" is the "I" and for Emerson "being" is a circle, a sphere, a ball. This subtle uses of paronomasia have auditorally prepared us for the more overt connotations in the rest of the passage, in which the "I/eye" becomes one with "Universal Being," part and particle of God.

The Visionary has been troped into Faraday's grain of water containing electrical relations equivalent to a flash of lightning. This charged passage itself, like the Visionary, is simultaneously matter and energy; it's like an atom, its tropes like electrons turning around a highly charged nucleus. The passage and the Visionary are transparent eyeballs, structures through which the energy of "the Universal Being" is revealed. Emerson rehearses this relationship between matter and energy in his journal:

A fact is only a fulcrum of the spirit A man, I, am the remote circumference, the skirt, the thin suburb or frontier post of God but go inward & I find the ocean; I lose my individuality in its waves. God is Unity, but always works in variety. I go inward until I find Unity universal, that Is before the World was; I come outward to this body a point of variety.
(JMN 5:177)

The "I" and the language, like facts, are both themselves and not themselves, discrete entities and patterns connected by energy. James Cox is correct to observe that the eyeball is "an assertion of infinite existence in a definite image." Emerson becoming a "transparent eyeball" is "master metaphor" for the "active spiritualizing power of language--it is God acting as language" (61).

3. The Spectacle of Morning

Emerson constructs yet another visionary moment in *Nature*, in which the beholder, like the transparent eyeball, becomes one with spirit by conspiring with it. Readers are likewise made to breathe with the spirit, as Emerson's words cause

them to perform the script of nature. This passage alludes to the opening of the Bible. It is, appropriately, a morning piece. It occurs in the "Beauty" chapter, in which Emerson describes a instant of pure beauty in nature:

I have seen the spectacle of morning from a hillside over against my house, from day-break to sun-rise, with emotions an angel might share. The long slender bars of cloud float like fishes in the sea of crimson light. From the earth, as a shore, I look out into that silent sea. I seem to partake its rapid transformations: the active enchantment reaches my dust, and I dilate and conspire with the morning wind. (CW 1:13)

Emerson indirectly links this passage to the transparent eyeball one by calling morning a "spectacle," which recalls the "eye-ball" imagery in the earlier visionary passage. Like the eyeball, both the Visionary and nature here are transparent patterns generated and shaped by rapid transformations of spirit. Like an angel in heaven admiring and participating in God's power, the Visionary not only looks at the bright atmosphere, but partakes of it, shaping it through his own rhythmic breathing as he dilates and conspires. As with the earlier passages, water imagery is present. The "sea of crimson light" corresponds to the "floods of life" and the "currents of Universal being."

The sentences condense several tropes and figures. The sky metaphorically becomes an ocean and the clouds, fishes, as the earth becomes its shore. This metaphor is then converted into no less than three new metaphors. The "sea," already a trope for the sky, is troped into "crimson light," suggesting that the air of the sky, the water of the sea, and the light correspond. Then, this sea of light is

further metaphorized into a shaping force, a transformer, as the speaker "partakes of its rapid transformations." Like a transformer of electricity, the air channels the charges of the atmosphere to the circuits of the Visionary. The "transformations" are "enchanted," their activity reaching the Visionary's dust. The metaphor of enchantment activates the figure of paradox; it converts the "silent sea" into a singing sea, as "enchantment" derives from "incantare," "to sing against." Finally, the ocean is turned back into the morning wind, ending its protean journey through this maze of tropes back where it began.

This "morning wind" is an allusion. In having his Visionary conspire with the morning wind, Emerson echoes *Genesis* 2:6-7, in which God creates Adam: "But there went up a mist from the earth, and watered the whole face of the ground. And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul." Emerson rehearses this primal creation scene by fashioning the Visionary as a new Adam who is inflated by the breath not of the Judeo-Christian God, but by nature. "[T]he active enchantment reaches my dust." Moreover, Emerson's Visionary, unlike Adam, remains angelic and partakes of God's creative breath even after his eyes are opened to the spectacle of morning, to knowledge of nature. As the wind is also troped into water and light, it echoes the several Biblical passages relating God to floods of life and to light and revises them by locating life and light in nature. Further, as in the eyeball passage, Emerson alludes to Jesus's baptism. The Visionary is washed in the creative waters, in which he breathes with and is exalted by spirit. In sum, in this passage, Emerson's Visionary is

fashioned as a revised version of God at the creation of the world, Adam at his own creation, and Jesus at his baptism.

Like the morning wind, the Visionary himself turns through several tropes. First, he is equated with the shore. "From the earth, as a shore, I look out into that silent sea." "Shore" can refer to both earth and the "I." This double meaning not only indirectly equates the Visionary with the earth, but also connotes that he is a mixture of water and matter. As seen in the analyses of the first two visionary passages, water is metaphorically equated with spirit: In the first passage, nature is animated by "floods of life"; in the second, by "currents of Universal Being." The Visionary in this passage, then, is a mixture of spirit and matter, a pattern of energy like all things in nature. Moreover, a shore is both shaped by and shapes the water running beside it, just as matter is a pattern that is figured by and figures the energy that generates it. This correspondence between human and nature is reinforced when the speaker himself is turned into "dust," a metonymy of association. The readers share in this journey, like Proteus dissolved and resolved into several forms before finding their proper place in spirit.

"Dust" is spectacle of this passage, its center. The Visionary's "dust" is acted on by the protean sky. His dust expands and breathes with the "active enchantment" of the sky as a "silent sea." This interaction results in a catachretic metaphor in which the Visionary's dust expands in water (of the "silent sea") in which it should dissolve. He simultaneously expands and dissolves. This catachretic paradox echoes the paradox between a silent and singing sea and confirms the paradox of the universe, which is matter and spirit, positive and

negative, in which nature "is *one thing and the other thing*, in the same moment."

Emerson's supports these senses with sounds. Paronomasia weds "seen" and "sea"; to see is to learn that one is connected to the sea of being. Moreover, other "s" words are connected to these two through alliteration, as "spectacle" metaphorically places an eyeball in nature, connecting it with the human, and "sun-rise" connects to vision, proper seeing, as it is the lamp that lights the world and the apocalyptic sun in the opening paragraph. Another instance of paronomasia occurs in the aural link between "shore" and "share." The Visionary metaphorically becomes a shore, which makes him identical with the earth, but also connotes that he is a mixture of water/spirit and matter. This correspondence between human and nature is reinforced when the Visionary himself is troped into "dust." "Share" reinforces this mixing, as it denotes the Visionary's relation to the world of spirit, and aurally supports the fact that the speaker as shore partakes of, shares, both spirit and matter.

Moreover, the sound effects of the passage force us to mimic the actions of the conspiring speaker. They make us breathe. In the first two sentences, there are frequent voiceless spirants, consonant sounds produced by the breath flowing from the mouth unimpeded by vocal cords and thus entirely dependent on the force of the breath for sound. In the first sentence "s" occurs in "seen," "spectacle," "house," "sun-rise," "emotions," followed by "slender," "bars," "fishes," "sea," and "crimson" in the second. Further, in the second sentence "f," another voiceless spirant, stands out in its alliterative position in "float" and "fishes." In the third sentence, other instances of "s" and "f" occur, but also "th" and "sh," other

voiceless spirants: "*From*," "*earth*," "*shore*," "*silent sea*." We must breathe more forcefully to produce these sounds than in making others. However, in the next sentence, the consonants quicken breathing, as there are several "t" sounds, voiceless stops, sounds generated by the breath flowing from the lungs unimpeded by the vocal cords but forcefully stopped and then suddenly released in an explosive sound. These "t" sounds are interspersed with several voiceless spirant "s" sounds to produce the effect of rapid breathing: "*to*," "*parrake*," "*its*," "*transformations*," "*active*," "*enchantment*," "*reaches*," "*dust*," "*dilate*," "*conspire*."

In attending to the passage, we conspire with it, and our breathing onomatopoetically quickens as both we and the passage undergo rapid transformation. Our breathing quickens. We perform the script of nature. This passage overtly expresses the relationship between the artist and nature. If Emerson's book corresponds to nature's book, then his creative process corresponds to nature's. Spirit creates the things of nature, troping them with its rapid transformations, driving them to perpetual inchoation. Likewise, the artist, an alchemist, fashions his own book of nature with his troping, as he rapidly transmutes the morning wind into visible with and through his language. This transmutation likewise occurs in readers, animating them with breath.

III. Fields of Varying Force

1. Centrifugal and Centripetal Forces

Emerson's electromagnetic poetics produces polarized force fields, sites of extreme tension. The passages analyzed thus far threaten readers with centrifugal

force, as they strain the faculties. These sequences are fields of extreme force, places where the larger force field of the essay becomes turbulent, agitated, swells from the page. If the overall essay can be pictured as a stream, these sites are whirlpools; as an atmosphere, they are storms. Sublime storms, they shock readers into an awareness of a relationship between matter and spirit. They are extreme versions of forces that are always present in nature and language. Like Faraday's coils or God's whirlwind, they powerfully reveal the forces pervading world and word. They teach that even the most static-seeming materials are condensations of vast systems of force. They school us in a new way of seeing and reading.

What of the rest of the essay? Is it a static contrast to these dynamic sites? Quite the opposite. If we attend to words as Emerson teaches, if we attempt to redeem them, convert them into seeds of thought, then we find that the remainder of *Nature* is likewise a field of force, a pattern of energy, yet containing lower levels of voltage, forces more centripetal. The overcharged vectors shock readers into a heightened awareness of other Emersonian sequences, teaching them how to interpret all matter as spirit, all his words as things. Readers find that even the ostensibly stable sentences and structures are unsettling. Even Emerson's most quotidian passages become windows to nature's "spherules of force," even sentences whose sole purpose is ostensibly to clarify terms. We are never safe in *Nature*.

2. Emerson's Glossary

For example, what we might call the "glossary" section of *Nature*,

ostensibly meant to define terms, does not provide security but places readers in flux. In the "Introduction," Emerson refers to "nature," the subject of the essay, several times before seemingly offering definitions of the term. The word first appears in the fourth sentence of the essay: "The foregoing generations beheld God and nature face to face . . ." (CW 1:7). Here nature is personified; it has a face. The word appears again a few sentences later in the clause "Embosomed for a season in nature, whose floods of life stream around and through us . . ." (CW 1:7). Again, nature is rendered by prosopopoeia, compared to a person with a sheltering bosom, but then is suddenly turned into a liquid flood that flows powerfully. "Nature" soon after appears in a sentence which claims that nature, like man, is a hieroglyph that "describes its own design" (CW 1:7). Nature as liquid is suddenly turned into sacred writing. The next prominent uses of the word occur in the final paragraph of the introduction. In this paragraph, "nature" is scripted in a number of forms; "Nature," "nature," "NATURE," and "*Nature*." What are the differences between each form of the word? The universe is comprised of "Nature" and "Soul." All that is distinguished from the human as the "NOT ME," among which is "nature," is "NATURE." The word entails both a common and philosophical import. "NATURE," one can surmise, is the philosophical term, while "*Nature*," "essences unchanged by man," is the common one. What is the difference between the common and philosophical sense of the word? What does "nature" with a small "n" designate? How do these definitions of nature interweave with nature as a face, a bosom, a river, sacred writing?

Aware of the fluxional quality of things, all in rapid metamorphosis,

Emerson casts his words as evolving patterns of energy as well. Just as it is impossible to step in the same river twice, it is impossible to pin "nature" to one meaning. "Nature" in the essay is not a clearly-defined term but a semantic field. Emerson's glossary is a parody of clear definition, a quiet paean to the nature "whose permanence is perpetual inchoation."

Emerson's early definition for "man" likewise dissolves into an intensity. In the second paragraph of the essay, Emerson writes: "Every man's condition is a solution in hieroglyphic to those inquiries he would put. He acts it as life, before he apprehends it as truth. In like manner, nature is already, in its forms and tendencies, describing its own design" (CW 1: 7). A hieroglyph is a pictorial character that is an element of a sacred script, often mysterious. One's condition is, like nature, a form of writing, a "solution" in writing. A condition is a state of being, health, readiness, or physical fitness, but also suggests a clause which depends on another clause. "Condition" derives from the Latin word *condicere*, which means to talk together. Health, dependence on something else, and skill in entering into a dialogue affect the solution to a text. A solution in this context is an answer. But a solution is also a mixture of two or more substances, and solving is the action of separating or loosening, as in the sense of solving a problem, or of dissolving something. Indeed, Emerson writes in *Nature* that spirit permeates and dissolves matter by filling it with overflowing currents (CW 1:42). He seconds this in "Intellect," suggesting that the relationship between force and form is one of solving and dissolving: "Water dissolves wood and stone and salt; air dissolves water; electric fire dissolves air, but the intellect dissolves fire,

gravity, laws, method, and the subtlest unnamed relations of nature with its resistless menstruum" (CW 2:193). A solution--man, nature, language--is a dissolution, a loosening.

In attending closely to the opening sentence of the passage, we find that it loosens. A condition isn't simply a static state of being, but health, which depends on how well one interacts with--enters into dialogue with--one's environment. If a condition is a solution, the solution cannot be closed and univocal, as two is the solution of one plus one. A condition is a process or interaction, so its solution must also be a process, in this case a process both of dissolving and solving, of loosening and resolving. The solution arises in the form of a hieroglyph. This writing must both supply an answer and the dissolution of the answer, both dissolve and resolve.

The passage goes on to state that nature corresponds to the human condition; it too acts out its condition while at the same time embodying a solution. In its forms and tendencies, it describes, or writes down, its own design, or pattern. But the prefix "de" means the reverse of, or to remove from, as in to "de-throne." To *de*-scribe then, also means "not to write," or to remove from writing, just as *de*-sign also implies the undercutting or removal of a sign. The prefix "de" also derives from the Latin "from," or "out of." The signs and scripts of nature are constantly moving outside of themselves. *Nature*, then, writes a pattern in the form of a hieroglyph while simultaneously erasing it, and writes a description that is in transit, metamorphosing, constantly moving out of itself. Nature, remember, is a work of ecstasy, moving out of stillness. The things of

nature and the words that express them are constantly moving out of stillness, rushing to keep up with the forces that permeate them.

A hieroglyph is often a riddle, a picture that is difficult to decipher. If nature, a condition, and Emerson's essay are all hieroglyphs, their solutions are not clearly decipherable, but simply loosening. Emerson's writing, his essay, is a solution to nature's hieroglyph, but it is also a hieroglyph itself, a riddle resilient to answers yet pulling readers deeper into its labyrinths.

By now we suspect the semantic coherence of Emerson's patterns. In attending to his ostensible clarifications of "nature" and "man," we are loosened into intensities, energies, fields. We should not be surprised that Emerson's definitions for "words" in the "Language" section likewise dissolve. He first of all designates words as "signs of natural facts" (CW 1:17). As shown in the last chapter, "signs," as opposed to "symbols," are visible tokens, like allegories or types, that point to a meaning. He soon after refers to words as "symbols" (CW 1:19), which, as was also detailed in the last chapter, are concrete embodiments of invisible meanings. The etymology of "sign" betrays its static nature, as it derives from *signum*, a visible impression or stamp. "Symbol," however, is dynamic and flexible, deriving as it does from *symbollein*, to throw together. The sign is fixed; the symbol metamorphoses.

Emerson further provides other definitions of words based on the root *ballein*, to throw: he calls them "emblems" (CW 1:21) and "parables" (CW 1:22). "Emblem" derives from the Greek for "to throw in"; parable, "to throw beside." The origin of these words reveals their common source in natural action, that

words throw something. Do they throw meaning, or their readers, or both? Do they throw in the same direction? They throw "together," "in," and "beside." Emerson's words indeed hurl readers in different directions, keeping them guessing. We are driven out of a clear sense of what words do and thrown to more questions.

In addition to the terms listed above, Emerson refers to words that depend on nature as "types," "allegories," "images," "proverbs," and "fables" (CW 1:18-22). As we know from the last chapter, "allegory" and "type" were terms belonging to opposing camps of Biblical interpretation in the centuries before Emerson's. Catholic theologians favored the fourfold "allegorical" hermeneutic while the Protestant thinkers employed a more historically grounded "typological" method of interpretation. Emerson blurs these two words not only with one another, but also with "symbol," which was defined by Goethe and Coleridge, as Emerson knew, in opposition to allegory. It is impossible to reconcile all of these terms into a clear, univocal definition.

Yet another word for "words" is "metaphor": "The world is emblematic. Parts of speech are metaphors because the whole of nature is a metaphor of the human mind" (CW 1:21). "Metaphor" derives from the Greek meaning "to carry over," "to transfer" but also to change or alter actively, as in "to goad a horse." Emerson's definitions for words indeed goad readers, transferring them from security to risk, from stasis to force, from patterns to the energy generating them. Just as these "definitions" resist closure, carrying readers away from clarity and into possibilities, so the primary question of the essay opposes an answer.

3. Emerson's Classifications

Like Melville's classifications of whales in *Moby Dick*, Emerson's definitions don't reinforce order but call it into question, suggesting that a world in rapid metamorphosis cannot be corralled in rigid categories. The overall structures of Emerson's essay, his organizations and classifications, like unsettle more than stabilize. Early in *Nature*, Emerson asks the primary question of his essay: "Let us inquire, to what end is nature?" (CW 1: 7). Not surprisingly, Emerson puns on "nature," as it means both the natural world and his essay. He reasks this question in each of his chapters; as he writes at the beginning of "Commodity," "Whoever considers the final cause [end] of the world [nature] will discern a multitude of uses that enter as parts into the result. They all admit of being thrown into the following classes: Commodity; Beauty, Language; and Discipline" (CW 1:11). In each of these section he considers the question of nature's end, appears to provide an answer, but then undercuts the answer in the next section. In "Commodity," he asserts that "All the parts [of nature] incessantly work into each other's hands for the profit of man" (CW 1:11). Then, at the beginning of "Beauty," the next chapter, he questions this claim by proclaiming that "A nobler want of man is served by nature, namely, the love of beauty" (CW 1:12). Right after he ends the "Discipline" chapter, he writes "To this one end of Discipline, all parts of nature conspire" (CW 1:29), as if he has answered the question once and for all. Indeed, discipline was the final category in the list of ends he announced he would consider. However, he disrupts his early plan of considering the question in four

chapters by meditating on it in three more. A few paragraphs after his clear assertion that nature's end is discipline, he again revises by claiming that "Nature is made to conspire with spirit to emancipate us" (CW 1:30), a statement which seems to work against discipline and toward freedom.

By the time Emerson again ponders the question in the penultimate chapter "Spirit" we realize that the end of nature, both the essay and the natural world, is endless. "Uses that are exhausted or that may be, and facts that end in the statement, cannot be all that is true of this brave lodging wherein man is harbored, and wherein all his faculties find appropriate and endless exercise" (CW 1:36-37) Questioning of nature is an "endless exercise," yielding an "infinite scope." Indeed, in the final paragraph of the essay, Emerson observes that questions about ends are endless: "So shall we come to look at the world with new eyes. It shall answer the endless inquiry of the intellect" (CW 1: 44). The nature depicted in *Nature* has no fixtures, is fluid and volatile. Always metamorphosing, it cannot be corralled into maxims and formulas, but approximated in tropes.

Nature, though resembling a linear philosophical treatise, with defined terms, sections and subsections, is full of contradictions. After the introduction, the essay is divided into eight chapters. Most of the sections are further divided into three or four numbered sub-sections. This organization gives the appearance of order, a familiarizing map by which we negotiate the essay. However, Emerson's structures are disrupted by the centrifugal forces of nature. For example, in the introduction to the essay, Emerson defines nature; it is distinguished from the "ME" of the soul as the "NOT ME" (CW 1: 7). Later,

though, the essay suggests that "Nature is so pervaded with human life, that there is something of humanity in all . . ." (CW 1:38). And still later, we learn that humans created nature: "Out from him sprang the sun and moon; from man, the sun; from woman, the moon" (CW 1:42). In fact, Emerson contradicts himself in the same paragraph. He concludes his section "Beauty" by writing, "The world thus exists to the soul to satisfy the desire of beauty. This element I call an ultimate end" (CW 1:17). But three sentences later, he writes, "But beauty in nature is not ultimate . . . not as yet the last or highest expression of the final cause of Nature" (CW 1:17).

Nature is a field of varying intensities, revealing what Karl Popper claimed C.S. Peirce uncovered: that clouds are not, as Newton held, clocks, but that all clocks are clouds. Emerson's vectors urge readers to view *Nature* as a moving cloud, a Protean sea of energies occasionally compressing into storms of lightning. Alternatively, readers view *Nature* as a stream irregularly curving into turbulences, pulling into whirlpools. *Nature* is a loose structure, a tentative balance of centripetal and centrifugal forces, sameness and difference, solution and dissolution. Like the cabinets housing specimens in the Jardin des Plantes, the essay is a pattern revealing the pulsing energies of nature: "In a cabinet of natural history, we become sensible of a certain occult recognition and sympathy in regard to the most unwieldy and eccentric forms of beast, fish, and insect" (CW 1:40). A cabinet, like those Emerson saw in the Jardin de Plantes, is a contrived structure in which specimens are placed in order to show relationships of class, order, genus, species, etc. The passages to which we have attended, as well as

Emerson's essay, which contains chapter headings, sub-headings, and grammatically correct syntax, are cabinets; that is, they are constructs--texts--built to discover invisible relationships between phenomena that appear to be disparate. But these texts do not tell the entire story of nature, which is ever disrupting classifications and stirring new solutions. Events, facts, words, essays are the products of vast, bewildering processes which they intimate, but never fully present. They are a helpful tools for our understanding. They are snapshots of rushing nature.

IV. The Sublime Labyrinth

Emerson in *Nature* provides for readers experiences similar to those he underwent. Just as his vision in the Jardin des Plantes showed him the relation between spirit and matter, teaching him a new way of seeing, so the sublime sites in his essay shock readers into an awareness of the nature of words and things. Emerson's essay forces us to walk through his words as if we were on a nature walk. No experience is identical; nature keeps moving, changing, and so do we as we attend. As William James, echoing Heraclitus, notes in his *Principles of Psychology*, we cannot have the same experience twice (230). We have wandered through Emerson's *Nature* and collected various specimens. We might have collected others. If we had started with other sentences, our path would have wound otherwise. If, for example, instead of attending to the sublime, we had focused on Emerson's puns or plotted the uses of words related to "solution," or "nature," our path would have been different. Each strand of

Emerson's text leads through a unique labyrinth; as we track one strand, we are always aware that others are weaving alternative mazes that could intersect, engraft, and disrupt our journey. Each mood and the word that expresses it, Cavell suggests, is a category of our knowing (*Senses* 125); as long as texts are weaving and woven, knowledge has no end.

Reading Emerson's *Nature*, we perform the experience of reading *Finnegans Wake* as Umberto Eco describes it in *The Aesthetics of Chaosmos*:

Obviously, the reader cannot pursue all of the references in the course of a single reading. One is compelled to choose among possible interpretive paths, and to disambiguate various levels of sense . . . But even while moving at a given level, one must be alert to the existence of the others which appear in the background, disturbing the linearity of the first and stimulating the reader to feel an "uneasiness" and to suspect a "felicity," a baroque "wit." In other words, one is compelled to find an order, and, at the same time, to realize that there are many possible orders; a given choice does not eliminate the alternatives. (66)

Emerson's *Nature*, like *Finnegans Wake*, is an open work. It is a text; a force field; a hieroglyph; an ecosystem; a cabinet; a knot; a symbol; a grain of water; a river; a cloud.

Each analysis in this chapter has been a pattern revealing the ideas of earlier chapters. In attending to each these passages, we have looped back to preceding chapters, picking up abstract observations and blooding them with examples. In these visionary passages, we have seen a confluence of Emerson's theory of the

sublime, his poetics and rhetoric, his inscriptions of scientific insights, his meshing of science and religion. We have opened ourselves to the density of his prose. We have been taught that words, like nature, can be sites of flux and stasis, energy and matter. We have been enjoined to celebrate, with Emerson, the turnings of the world by singing hymns to this imperfect paradise. When we do, we intone, less beautifully, with others who have felt the tingle of Emerson's prose. His tropes circulate through fields of force he helped to generate, through Thoreau's Pond, Dickinson's slant of light, Peirce's "play of musement," James's will to believe, Stevens's supreme fictions. His legacy: the sublime is the labyrinth becoming the temple; worship, the weaving of vigorous praise.

Notes

¹For more discussion on this subject, see Bishop (51-2; 83-4), Allen, "A New Look at Emerson and Science", and Buell (147-48, 213-16).

²For descriptions of Emerson's relationship to the sermon that supports Hodder's, see Matthiessen (16-18), Berthoff (191-97), and Buell (102-139).

³Porte's meditations (64-86) on the influence of the apocalyptic background on Emerson are thorough and revealing. He emphasizes how acute readers of Emerson, like Thomas Carlyle and O.W. Holmes, placed *Nature* in the apocalyptic tradition. Carlyle wrote of *Nature*, "Your little azure colored book Nature gave me true satisfaction It is the true Apocalypse this when the 'open secret' becomes reveled to a man" (qtd. in Porte 79). Holmes wrote of *Nature* in the same strain: "Nature is the book of Revelation of our Saint Radulphus" [a conflation of "Ralph Waldo"]. Yoder places Emerson's agenda in this tradition, primarily his poetic agenda, in calling his verse "fables of apocalypse" (89-102, 31-32). In his article "Emerson the Prophet: Romanticism, Puritanism, and Auto-American-Biography," Bercovitch supposes that Emerson consciously fashioned himself as a prophet in the millinerian tradition. This article shows up in greater detail in Bercovitch's book *Puritan Origins of the American Self*. Bloom has always read Emerson as a prophetic figure whose work endeavors to reach back to the creative power of God; see especially the chapters on Emerson in *Poetry and Repression* and *Agon*. Also, for additional discussion of Emerson's apocalyptic strain, see Packer (22-84, *passim*).

⁴Buell, who also quotes the above passage to illustrate Emerson's stance toward the Bible, confirms Emerson's need for "new and better Bibles written by inspired contemporaries" (31).

⁵Hodder notes the sexual imagery present in this sentence (28).

⁶In his "'Image of That Horror': The Apocalypse in *King Lear*," Joseph Wittreich notes, based on this passage in *Revelation*, that new clothes can symbolize apocalypse (189-91).

⁷This sentence recalls Jonathan Edwards's "sense of the heart." Edwards's attitude toward the knowledge of God corresponds to Emerson's toward knowledge of nature. For Edwards, we experience God not only through logic, but also through feeling, what he calls "the sense of the heart." As Edwards expresses in

his "Personal Narrative" and his sermon "Divine and Supernatural Light," the moment of grace is a moment of sensuous apprehension of Calvinist doctrine, when one sees God as T.S. Eliot said the metaphysical poets viewed the world, through the lens of both feeling and thought, heart and mind, in which each thought is a feeling, and feelings are thoughts.

⁸For an excellent analysis of Emerson's desire for the axis of vision to be one with the axis of things, see Packer 72-81.

Coda

Theoretic End of Chemistry

Alchemy is the theoretic end of Chemistry.

Samuel Taylor Coleridge

Table Talk

The end of science returns to the first religious speculation. While Emerson's scientific cosmology is modern, pointing as it does to the conclusions of Einstein and Heisenberg, the impulse behind his interest in science is ancient, reaching back to the hermetic projects of the Renaissance *magi*. Both this span of time and disparity of discipline are apt. Emerson desired a grand synthesis that was not only universal--true for all time--but also holistic--subsuming all disciplines. His interest in science was driven by his quest for a theory of everything, an understanding of the "secret mechanism of life." In looking forward to twentieth-century chemistry, he extended his gaze back to the hermetic alchemists.

Historians of science have correctly observed that chemistry grew out of and superseded alchemy; Coleridge, however, reverses this idea in claiming that alchemy is the "theoretic end" of chemistry. In *Table Talk*, which Emerson was reading in the mid 1830's, Coleridge states that "Alchemy is the theoretic end of Chemistry--there must be a common, upon which all can become each and each all--but then it was turned to coining gold, & c." (269). While alchemy may have been debased into a purely practical art, it at one time was a hermetic science

grounded on Neo-platonic philosophy, whose "end" was to uncover the "all" emanating through the many. According to Coleridge, this should be the goal of modern chemistry. Coleridge went so far as to dub Davy "the Father and Founder of Philosophic Alchemy" in a letter of 1823 (269n). For Coleridge, the theory of the hermetic, Neo-platonist alchemists--like Giordano Bruno, Jacob Boehme, and Emanuel Swedenborg--was "the same with that of the Heraclitic physics, or the modern German *Naturphilosophie*, which deduces all things from light and gravitation, each being bipolar" (269n).

Hermetic alchemy, distinguished from the charlatan alchemy used by greedy conmen, was, like *Naturphilosophie* and the electromagnetism that grew out of it, a science devoted to synthesizing oppositions--matter and spirit, positive and negative, male and female, darkness and light, science and religion. The central concern of hermetic alchemy was to reveal, through experimentation, the spirit coursing through matter. The hermeticist was a monist, believing that divine spirit is inseparable from matter, that the cosmos is alive, a pattern of God's energy (Yates 22). As John Brooke observes, the philosophy of the hermeticism that flourished in Europe through the Middle Ages and the Renaissance is firmly opposed to dualistic tendencies in Christianity. While the orthodox Christian held that God created matter from nothing, *creatio ex nihilo*, the hermeticist maintained a creation *ex deo*, from God. For the hermeticist, as for Emerson, there was no opposition between "elemental matter and divine spirit": "Divine spirit was . . . the original primal matter, the alchemists' *prima materia*, from which sprang the entire universe" (10). Matter and spirit were continuous, one. The hermeticist intuited

what Emerson would most celebrate about Faraday's discovery: matter is energy.

Like the scientist, the hermetic alchemist learned his art from close observation of physical process. He discovered two primary principles active in nature, dissolution and coagulation, or disintegration and formation, and realized dissolutions as preparations for new forms. Nature, he found, unweaves her texts to weave new ones. Imitating nature, the alchemist in his alembic dissolved imperfect coagulations, like lead, literally, and his soul, spiritually, to reduce them to elements, and crystallized them into "nobler forms" (Burckhardt 123).

Alchemists often symbolized the rhythms of nature's "unrollings" and "rollings," its *solve et coagula*, with a double spiral or with the caduceus, two dragons or serpents winding in contrary directions around a staff or tree (130-131). This same motif of *coincidentia oppositorum* is often symbolized by a knot, which also gathers opposites into a synthesis (136-137). The double spiral of the caduceus is a symbol of the synthesis of opposites, be they solution or dissolution, centrifugal or centripetal force, positive and negative charges.

The *Naturphilosophie* of German thinkers like Goethe was, not surprisingly, linked to alchemy (Brock 38). Goethe, whose works (especially the scientific ones) Emerson read avidly in the thirties, undertook a serious study of alchemy early in his life in 1768, reading assiduously in the hermetic Swedenborg, even going so far as to experiment with an alembic (Friedenthal 66-7). Indeed, Ronald Gray has argued in *Goethe the Alchemist* that Goethe's morphology of plants, his theory of the Ur-plant, and his "Farbenlehre," his theory of color, were inspired by his early preoccupation with the ancient art. Both theories are

grounded on the idea that nature is a merging of opposites--the masculine and feminine, life and form, light and dark, etc. (54-100, *passim*). The product of his observations of plants was *Morphology of Plants*, published in 1790, a treatise with which Emerson was much taken in the years before *Nature*. Gray points out elsewhere that the language Goethe used to describe his impressions of plants cuts to the quick of scientific inquiries: he is, like the alchemist, "aware of the essential form with which . . . Nature is always playing" (*Critical* 115). By 1790 he may have forsaken the philosopher's stone for the Urpflanze, but his science retained alchemical motivations, as his study of plants uncovered, he thought, the primal principle of life, manifesting itself in polarized forces (Salm 23-35).

Emerson's joy over the discoveries of Goethe, Davy, and Faraday, each of whom worked toward proving that matter is energy, can perhaps be attributed to the fact that they corroborated hermetic intuitions. Emerson's impulse for a science of the spirit may have come from any number of the hermetic thinkers whom he included in his pantheon: Plotinus, Bruno, Boehme, Swedenborg, or Goethe. His practice of this science, his sublime science, however, certainly found inspiration in electromagnetism. If hermetic art is understood broadly as a practice designed to illustrate spirit, then certainly, in Emerson's mind, Faraday's electromagnetism, in uncovering and demonstrating the "secret mechanism of life" shared an agenda with the ancient art. For Emerson, there would be little difference in kind between the alchemist demonstrating that matter is spirit in his alembic and Faraday showing the same relationship with the copper coils he wound around an iron ring to illustrate electromagnetic induction; the steel filings

he employed to show that electromagnetism occurs in lines of force; or the beakers filled with solutions to be decomposed into their elements with voltaic electricity.

Emerson likely learned of connections between chemistry and alchemy in reading Davy's *Elements of Chemical Philosophy* during the 1830's. This work contained a brief history of chemistry, tracing the science from its roots in alchemy to Davy's own work. While Davy repeatedly condemns alchemy as a pseudo-science, he does credit it with offering the first excursions into experimentation. He find most of the European alchemy to be "fabulous"; yet, certain "heroic" figures occasionally emerge as bright lights from its darkness, like Roger Bacon of the thirteenth century, whose alchemical work was strictly philosophical, and Paracelsus, the alchemist who became the first public lecturer of chemistry in Europe (7-8). He seconds Francis Bacon's view on alchemy: "Lord Bacon happily described the Alchemists as similar to those husbandmen who in searching for a treasure supposed to be hidden in their land by turning up and pulverizing the soil, rendered it fertile; in seeking for brilliant possibilities they sometimes discovered useful realities; . . . he says a new philosophy arose from the furnaces" (15).

The furnaces, the alembics, of the hermetic alchemists served the same purpose for them as the voltaic piles and beakers supplied for Davy and Faraday. At the end of his history of chemistry, Davy sketches recent work in chemical decomposition made possible in 1800 by Alessandro Volta's primitive battery, called a pile, comprised, literally, of a pile of unlike metals, like zinc and silver, alternatively stacked one on the other. The pile produced an electric current capable of decomposing compound bodies into their elements as it separated

positively charged elements from negatively charged ones. By running a current from a Voltaic pile into solutions and decomposing them, chemists in the early part of the nineteenth century were able to explain the composition of matter in terms of electrical affinities and discover new elements (as Davy did in 1807, finding potassium and sodium), and find out which elements were positive (oxygen) and which negative (hydrogen) (38-39). Davy writes of electrical decomposition, later to be called electrolysis by Faraday: "Such are the decomposing powers of electricity, that not even insoluble compounds are capable of resisting their energy . . . Not even the most solid aggregates, nor the firmest compounds, are capable of resisting this mode of attack . . . by means of it, bodies are resolved into simpler forms of matter" (117). Electrolysis, the process by which Faraday revealed the electrical charge of water, was the chemist's version of alchemical process. Like sublimation or distillation, alchemical processes meant to burn compounds down into elements in order to uncover the relationship between solid and gas--matter and spirit--electrolysis was a means of shocking compounds into their electrically charged essentials, a mode of revealing the nature of matter. F. Sherwood Taylor in his history of alchemy observes that the one common factor in alchemy and chemistry is their technique; both work to separate and combine the constituents of bodies (191). Davy's own definition of chemistry extends this link, as for him the chemist's task was to "ascertain the causes of all phenomena of this kind [of the chemical kind] and to discover the laws by which they are governed" (1-2). Davy and the hermetic alchemist alike, though for different reasons, observed nature to reveal its sources.

When the alchemist or the scientist revealed the forces generating nature, they became poets, their experiments their tropes. The alchemist in his alembic constructed tropes to reveal the processes of nature. He imitated nature in his art, except he sped up its rhythms of change by agitating it with a flame. He made nature work faster than usual. The procedures he used to transmute solids to gases and leads to gold correspond to the poet's transmuting nature into language. The alchemist, like Emerson in his charged passages, troped material to reveal spirit. He was one of "poets of science," among whom Emerson includes Goethe, Davy, and Faraday. Just as Davy and Faraday through electrolysis shock matter to uncover its essentials, so the alchemist in the alembic alters matter to reveal spirit. so. Alchemist, scientist, poet: all three turn materials--be they metal, water, or language--from their ordinary courses in order to find the forces immanent in them. Fittingly, Faraday turned copper coils around an iron ring to discover electromagnetic induction. He provided a pattern to reveal nature's energy. This pattern, like Emerson's troping and the alchemist's experimentation, is an intense alteration, like a whirlwind or a storm, of the ordinary. It provides a theoptic moment that in turn transforms the way one perceives the world. After Faraday's discovery of electromagnetic induction, one could never see the world in the same way again; from then on, it was viewed as a field of force, its things condensations of vast systems of force, its very water drops, sublime.

Not surprisingly, Emerson uses alchemical language to describe the process by which a writer transforms insight into words. In *Nature*, he considers the process by which the writer converts the energy of nature and thought into

language: "The beauty of nature reforms itself in the mind, and not for barren contemplation, but for new creation" (CW 1:16). This passage is glossed with "Thus is Art, a nature passed through the alembic of man" (CW 1:17). Stanley Cavell has shown the importance of "conversion" in Emerson's thought. Coupled with "transfiguration," it describes the "double process" of Emerson's thinking. "Conversion" details the procedure by which experience is turned into thought. As Emerson observes, "A strange process, . . . this by which experience is converted into thought, as a mulberry leaf is converted into satin" (CW 1:59). Just as a silkworm turns a mulberry leaf into silk, so the writer/thinker converts his experience into thought, his thought into words. "Transfiguration" emphasizes the artistic element of this process. It is, Cavell asserts, "to be taken as a rhetorical operation, Emerson's figure for a figure of speech . . . the conversion of words" (*Conditions* 36). The process is one of "passing from Intuition to Tuition." Emerson's writing, Cavell suggests, is a tuition of his intuitions (36). Just as an alembic transmutes liquids into purer forms, so the creative mind metamorphoses intuitions into tuitions, experiences into words.

The process of converting that Cavell details corresponds to alchemical sublimation. "Sublimation" denotes several processes of conversion.

[S]ince the fifteenth century, sublimation has had currency in scientific parlance, referring essentially to a complete transformation of matter into purer forms. Thus, in alchemy sublimation described the process of converting matter by fire; in metallurgy it explained the refinement of minerals; in geology it once detailed how matter from the core of the

earth dematerialized to move toward the circumference; and in chemistry it described the direct transformation of matter from a solid to a gas. (Twitchell 2)

These conversions occur when there is a "leap" over a step in a sequence or when normal cycles of transmutation are accelerated. It not only describes Emerson's poetics, the process by which Emerson speeds up--converts--the turnings of his words in charged sites. It also figures the effects of his rhetoric, as it pictures the whirling minds of readers agitated and overwhelmed by the semantic abundance in these sites. Sublimation, then, takes place not only in Emerson's work, an alembic, but also in the minds of his readers, likewise alembics; their hermeneutical habits are transmuted into creative faculties by the fire of his language.

Emerson's poetics and rhetoric are detailed by sublimation, the practice of translating the sublime insights of science into sublime language. Moreover, sublimation and the hermetic alchemy of which it is a part illuminate Emerson's meshing of science and religion. The hermeticist's alembic and Emerson's essay are both sites of conversion meant to transform their beholders into adepts who know the hidden causes of nature. Just as the hermeticist heats the alembic to prompt processes that illustrate the relationship between spirit and matter, so Emerson in *Nature* turns words to figure the same relation. Likewise, just as the metallic transmutations in the alembic symbolized and prompted spiritual conversions, so the turning tropes of *Nature* motivate conversions in readers. The sublimations of Emerson's words inaugurate sublimation in his readers.

Emerson's gathering of alchemy and chemistry, religion and science, nature

and art, rendered him, depending on one's view, either wildly eclectic or grandly synthetic. When one adds his desire to convert readers into polymaths in their own right, one is faced with an extremely ambitious agenda. Emerson truly did want to inaugurate a renaissance in America, a rebirth of ancient spiritual impulses in the new forms of modern sciences. During his historical moment, he was not alone in his project. Similar synthesizing programs were offered by Emerson's precursors on the continent, Goethe and Coleridge. These three were nineteenth-century versions of Lucretius, Dante, Milton, poets for whom drawing distinctions was mere talent, finding unity the highest genius. While we may scoff at these efforts in our specialized climes of thought, we might do well to recall the cosmologists of this century, including not only Einstein and Heisenberg, but also James Joyce and Wallace Stevens. If we may look askance at the prospect of a poem containing everything, we always stand in awe when everything becomes a poem.

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